The Journey of Maps and Images on the Silk Road

EDITED BY

PHILIPPE FORÊT AND
ANDREAS KAPLONY

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The Journey of Maps and Images on the Silk Road

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Philippe Forêt
Andreas Kaplony

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On the cover: Map of Lake Issıq Kul from the *Book of Curiosities*, an eleventh-century Arabic treatise on world geography. Many travelers through Central Asia toured Lake Issıq Kul. For a full discussion, see Yossef Rapoport's chapter in this volume. Source: The *Book of Curiosities*, Map of all lakes of the world: Lake Issıq Kul, Bodl.Ms.Arab.c.90, f. 40b–41a. Courtesy of the Bodleian Library.

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PRINTED IN THE NETHERLANDS

To Peter Frei, Professor Emeritus of Ancient History at the University of Zurich, mentor always eager to learn yet another language, to study yet another source, and to become acquainted with yet another field of research.

To Staffan Rosén, Member of the Royal Swedish Academy of Letters, History, and Antiquities, Professor of Korean Studies at Stockholm University, in admiration and constant gratitude.

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For too long, we have been vaguely aware that the spatial concepts that traveled on the Silk Road inspired ancient and medieval divination, Arabic astronomy, Buddhist paintings and statuary, Armenian miniatures, Chinese maps, and Catalan portolans. This volume contains ten chapters that examine precise instances of exchange between the visual cultures of premodern Asia and Europe. It is the outcome of a conference held at the University of Zurich and the Swiss Federal Institute of Technology at Zurich (Collegium Helveticum) in May 2004.

As symposium organizers, we felt that the meeting was a success but had not ventured far enough in its transdisciplinary discussion of the journey of maps and images on the Silk Road. We therefore proposed to the conference participants a book project that would give them an opportunity to air their views without worrying about being cut off after 20 minutes. What we had in mind was a collection of specialists' essays more than a curriculum guide. We would like to express our gratitude to our authors for their willingness to answer our many queries and accept our suggestions.

The assistance that many colleagues have given us over the last four years has made possible the publication of a volume on maps and images on the Silk Road. We thank them all with immense pleasure. Lorenz Hurni (Institute of Cartography, Swiss Federal Institute of Technology at Zurich), Ulrich Rudolph and Johannes Thomann (Oriental Institute, University of Zurich), and Valerie Hansen (History Department, Yale University) helped us with their comments. Corinne Pernet (Institute of History, University of Zurich) and Angi Kaplony, as well as our children, Adélie, Félicien, Mirjam, Esther and Magdalena, patiently discussed with us our slow progress. Redouane Djamouri (School of Higher Studies in the Social Sciences, Paris) provided constant encouragement. Staffan Rosén (Royal Swedish Academy of Letters, History, and Antiquities), Kim Hodong (Seoul National University), and Johan Elverskog (Southern Methodist University) made critical suggestions on the focus of our manuscript. Talks with Dan Waugh (University of Washington at Seattle)

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Philippe Forêt and Andreas Kaplony
Uppsala and Zurich

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Jonathan M. Bloom shares both the Norma Jean Calderwood University Professorship of Islamic and Asian Art at Boston College and the Hamad Bin Khalifa Chair of Islamic Art at Virginia Commonwealth University. His work has explored such subjects as the development of the minaret, the history of paper, and art and architecture during the Fatimid period. His many publications include *Minaret: Symbol of Islam* (1989), *Paper before Print: The History and Impact of Paper in the Islamic World* (2001), and *Arts of the City Victorious: Islamic Art and Architecture in Fatimid North Africa and Egypt* (2007), as well as the three-volume *Grove Encyclopedia of Islamic Art and Architecture* (2009), which he has edited with Sheila Blair.

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Dickran Kouymjian is director of the Armenian Studies Program of California State University at Fresno. His recent publications are on the artistic organization of illuminated early Armenian Gospels, inscribed Armenian manuscripts bindings, the iconography of the Armenian versions of the *Alexander Romance*, the unique Armeno-Greek papyrus, and the destruction of Armenian property during and after the 1915 genocide. Among his major books are *Arts of Armenia* (1992) and *Album of Armenian Paleography* (2002, with Michael Stone and Henning Lehmann).

Paul Kunitzsch was professor of Arabic studies at the Institute of Semitic Studies of the Ludwig-Maxilimians-Universität of Munich. Since his retirement in 1995 he continues work as a "guest" at the Institute for the History of Science of the same university. His research has been mainly centered on the transmission of the sciences from ancient Greece to the Arabs and from them to medieval Europe. His books include *Arabische Sternnamen in Europa* (1959), *Untersuchungen zur Sternnomenklatur der Araber* (1961), and *Claudius Ptolemäus: Der Sternkatalog des Almagest* (1986–1991). He is a full member of the International Academy for the History of Science in Paris, the Bavarian Academy of Sciences, and a corresponding member of the Cairo Academy of Arabic Language.

Yossef Rapoport is lecturer in the Department of History, Queen Mary University of London. His publications include *Marriage, Money and Divorce in Medieval Islamic Society* (2005). In 2007 he published, together with Emilie Savage-Smith, an electronic edition and translation of an eleventh-century Arabic cosmography known as the *Book of Curiosities* (http://cosmos.bodley.ox.ac.uk).

Johannes Thomann teaches and does research at the Oriental Institute, University of Zurich. His main interest lies in chronology and mathematics in the Islamic World. Among his publications are *Studien zum "Speculum physionomie" des Michele Savonarola* (1997) and *Schattenspur: Sonnenfinsternisse in Wissenschaft, Kunst und Mythos* (1999, with Matthias Vogel).

Dorothy C. Wong is an associate professor of East Asian art at the University of Virginia. Specializing in the Buddhist art of medieval China, she addresses art in relation to religion and society. In addition to *Chinese Steles: Pre-Buddhist and Buddhist Use of a Symbolic Form* (2004), she has written articles that range in topic from pilgrims' maps to devotional arts, deity cults, pure land paintings, gender and ethnicity in Buddhist patronage, and cults of saints in Asian traditions. She has edited a conference volume entitled *Hōryūji Reconsidered* (2008), and is working on a digital project called "Silk Road: The Path of Transmission of Avalokiteśvara."

Nicolas Zufferey is professor of Chinese language and civilization in the Chinese Studies Program of the University of Geneva. Most of his research has been on the origins of Confucianism and the history of the Han dynasty. His principal publications are *Wang Chong (27–97?): connaissance, politique et vérité en Chine ancienne* (1995) and *To the Origins of Confucianism* (2003).

TRANSLITERATIONS AND CONVENTIONS

For the languages of Central and South Asia, our general policy has been to avoid the technical transliterations and systems that English readers would find difficult to pronounce. Instead, we use spellings with which they are already familiar. The transliterations of common Sanskrit terms have been anglicized. For the sources and names in Arabic, Persian, and Turkish, we rely on the second edition of the *Encyclopaedia of Islam* (Leiden: Brill, 1960–); for those in Armenian, on the *Revue des Études Arméniennes*; and for those in Chinese, on the Hanyu pinyin system.

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The Silk Road network. See fold-out.

FOREWORD

Lorenz Hurni

According to the International Cartographic Association, "a map is a symbolized image of geographical reality, representing selected features or characteristics resulting from the creative effort of its author's execution of choices, and is designed for use when spatial relationships are of primary relevance." This definition, which emphasizes the role of personal creativity, puts cartography apart from other sciences.

The *Journey of Maps and Images on the Silk Road* has two great merits: it takes us away from the traditional debate on objectivity and subjectivity in the sciences, and it introduces us to entirely different ways of depicting geographically referenced features. Its authors disclose how geographic and cartographic knowledge progressed along the Silk Road. We learn that premodern maps and cartographic images, like the cadastral maps of China, often had rather pragmatic applications. An Islamic map copied in the thirteenth century represented Turkish ethnicity well before the rise in the West of thematic cartography. Buddhist artists designed cosmic maps several centuries before Christians made their religious T-O (*orbis terrae*) maps.

Advanced tools such as orientation grids were developed in Asia long before European mapmakers rediscovered them. Some Catalan charts even contain carefully selected Asian iconography. Despite a gap that lasted several centuries, mapping in Asian and European cultures has served an identical purpose. Map production and design, which of course varied significantly, reflected the techniques and supports then available as well as the specific ways in which each civilization perceived, selected, and displayed geographical information. This new volume proves that spatial and visual information circulated well across premodern Eurasia. Being so mobile, the cartographic body of knowledge of Asia and the Middle East influenced modern mapping to a greater extent than we generally assume. *The Journey of Maps and Images on the Silk Road* is an important contribution to a better understanding of the rich interaction we see between the early Eastern and Western schools of cartography.

PREFACE
WHAT IS A MAP?

Valerie Hansen

Most people today have no trouble answering the question, "What is a map?": a map is a picture on paper, often a foldable sheet, that shows a destination that you plan to visit. The map may be virtual, and you may view it on a Global Positioning System, but its main purpose is to help you navigate your route. We have no doubts, either, about what can be mapped (every place on earth, the moon, Mars, with other planets and stars soon to come) and what cannot be (heaven, hell, or any version of an afterworld).

The situation was far less clear along the Silk Road—the overland routes crossing Eurasia before 1500—as this fascinating volume shows. The cost and difficulty of travel meant that few people could afford to leave home. Those who could frequently hired guides, so they had no need for maps. The area between the known world and the unknown worlds beyond was fuzzy: maps often showed fierce monsters or mythical beings guarding the edge of the known world. People used maps to learn about places, whether distant lands or imaginary universes, to which they would never travel during their lifetimes.

Yet some people were traveling during this period, and this volume illuminates the types of information that moved across Eurasia, whether originating in the Islamic world or East Asia. Different cartographic conventions prevailed in the Islamic world and East Asia. Starting in the eighth century, if not earlier, the Chinese used woodblocks to make impressions of books (see Jonathan Bloom's Chapter 4 below). The block carvers did not have to be literate. They began with any piece of writing or drawing, no matter how complex, and glued it face down on a wooden block, exposing the mirror image of the original. After carving out the mirror image on the face of the printing block, they could print multiple copies. This technique allowed Chinese bookmakers to reproduce earlier images and maps with considerable accuracy. Many of the first maps made in China

were made by officials for administrative reasons. The earliest extant maps date to the second century BCE, long before the use of woodblock printing, and were excavated from the tomb of a prince at Mawangdui 馬王堆, Hunan province (see Nicolas Zufferey's Chapter 1). They show a small section of territory, presumably a location that the army hoped to defend.

The Chinese made maps for religious purposes, too. Natasha Heller's Chapter 2 focuses on the map of an important Buddhist pilgrimage center at Mount Wutai 五台山 (literally, "Five Terrace Mountain") in modern Shanxi province. When the Japanese pilgrim Ennin 圓仁 (794–864) visited there in 840, he received a map of the site, sure evidence that it was already an established tourist center. Only tourists need maps; local people already know where they are. Ennin does not record what type of map he received, but it must have differed from the map of Mount Wutai in Cave 61 at Dunhuang 敦煌, the subject of Heller's chapter. This wall of Cave 61 is 13 meters long and 3.6 meters tall. It depicts Mount Wutai, a religious site some 1,600 kilometers from Dunhuang. Whereas the bottom register of the paintings portrays the important shrines at the site and cartouches containing verbal descriptions of past miracles, the top of the painting shows the heavenly beings who bring the miracles. Viewers living far from the mountain, Heller suggests, did not need to know where to stay because they would never visit the site. Instead, the painting offered them a "personal experience of the holy," which they could obtain by listening to a monk or lay Buddhist explain the map on the cave wall. Viewers could imagine themselves in the place of the many figures who witness the miracles of Mañjuśrī, the bodhisattva believed to preside over the mountain site.

Dorothy Wong's Chapter 3 discusses Buddhist maps of the cosmos. Buddhists in different schools conceived of the cosmos differently: some envisioned a single-world system whereas others described a triple-world system. A sixth-century stone relief from Chengdu, Sichuan (fig. 3.7) portrayed the coexistence of human and other worlds in the same way that the artist of Cave 61 at Dunhuang did: with the human register at the bottom and the pure land above. The designers made a fascinating innovation: they used single-point perspective to guide the viewer's eye to the Amitābha Buddha. Here,

too, we can imagine a lay audience looking at the stone tablet as a preacher describes the different beings of the cosmos.

Chinese mapmakers working in later centuries made other innovations. One of the most unusual was the use of a grid. A map entitled *Yuji tu* 禹迹图 (Map of the Tracks of Yu) dates to the twelfth century (see Chapter 4). As Bloom notes, the grid allows viewers to judge the relative distances between two places. Grids played a very different role in Islamic cartography. Islamic geographers followed the lead of Ptolemy (second century CE) and made charts giving a vertical and horizontal coordinate for every place on earth (and for every star in heaven). As Bloom points out, "In effect, he [Ptolemy] was the first to digitize images." Islamic cartographers adopted Ptolemy's innovation because it allowed even unskilled copyists to transmit information accurately. Accordingly, many Islamic geographic treatises put all the crucial information in the text and treated accompanying maps as nonessential illustrations.

In some cases, though, Islamic maps survive that present new information not in the accompanying text. Andreas Kaplony's Chapter 7 analyzes al-Kāshgharī's grammar of Turkic languages and a map, no longer extant, that survives only in a thirteenth-century copy by Muḥammad ibn Abī Bakr. On the basis of an imaginative reading of the text, Kaplony suggests that the mysterious yellow dots on the map represent the different Turkic tribes. A similar problem occurred in the copying of star charts, Paul Kunitzsch explains in Chapter 9. Whereas one fourteenth-century map showed the Andromeda Nebula as a comprehensible group of dots, later copies reproduced the dots in meaningless groups. Only when the German astronomer Peter Apian located the original text, and had it translated, was he able to restore the dots' meaning. Kunitzsch's chapter is particularly valuable for its elegant and concise description of how an astrolabe works.

Islamic cartographers, always wary of the distortions that could result from copying, made extensive use of color and shape. Copyists, they hoped, could reproduce a standard geometric shape more easily than an accurate geographic contour. This tendency to employ stock shapes may account for the stylized maps in the *Book of Curiosities* (originally drawn in the eleventh century and copied in the twelfth or thirteenth century), the subject of Yossef Rapoport's Chapter 8. The maps in this manuscript show the Mediterranean and the

Indian Ocean as perfect ovals. The place names around the edge are distributed not by their actual geographic location but, instead, as if someone simply copied a list of points on an itinerary along the edges of the oval. The *Book of Curiosities* contains exactly the kind of error that Islamic cartographers dreaded: the copyist has mistakenly transposed elements from the original map, now lost, so that China is directly connected to the Arabian Peninsula (with India missing), and Africa and India form one landmass. Another error is particularly intriguing: the cartographer included a scale marker at the top of his world map but then portrayed the world as a set of shapes whose dimensions have no relationship to the graticule scale. He seems to have copied the graticule scale with "little idea of what it meant or how it was to be used," as Bloom puts it in Chapter 4.

These transfers of one motif or image from one cultural context to another, where an image could take on an entirely different meaning, are among the most fascinating moments in this volume. The first use of a grid in the Islamic world that Bloom has found is in the thirteenth century, when architects used graph paper to build the Ilkhanid palace at Takht-i Sulaymān in northwestern Iran. Before that, they simply built buildings on the spot, without any plans. But where did they get the idea of a grid? From China, according to Bloom. It seems, then, that a Persian must have seen some kind of grid used in China. The Chinese employed grids to make maps (like the Map of the Tracks of Yu), to practice calligraphy, and for architectural drawings (as in the twelfth-century architectural manual entitled *Yingzao fashi* 营造法式). Unlike the Chinese, the Persians used a grid keyed to a single unit (the *gaz*, or cubit) to plan how many bricks were required for a given edifice. Although the Persian who borrowed the first grid could not read the accompanying Chinese text, he "was inspired by it to produce something quite new and different," Bloom suggests, "even if the original intended meaning was completely lost in translation."

The same kind of process underlies the transformation of horoscopes from circular shapes to squares, argues Johannes Thomann in Chapter 5. People in the Islamic World saw square Chinese horoscopes and adapted the format for their own use. Similarly, in 1286, when artists made the headpiece of an Armenian lectionary, they included a very Chinese-looking dragon and phoenix. In Chapter 6, Dickran Kouymjian suggests that this was an informed borrowing:

just as the artists of the Liao dynasty (ca. 907–1125) used the dragon and the phoenix to depict the emperor and the empress, so the Armenians used the same symbols to represent the king and queen of Armenia.

No one who attended the original conference in Zurich from which this volume has emerged can forget Sonja Brentjes's images of horses' tails from the Catalan Atlas. The distinctive tails have no hair at the top; the first hairs appear some distance from the horse's rear. In Chapter 10, Brentjes uses the clues in the horses' coloring—light blue, pink, white, or black, all spotted—to show that the maker of the Catalan Atlas borrowed imagery from late Ilkhanid painting. This is the rare and exciting example of a distinct image moving across the Silk Road from Iran to Spain: we can see the image both in its original Ilkhanid context and in its later Catalan version. This is as close to a smoking gun as anyone working with evidence from before 1500 has any right to expect!

Frankly, this volume should make readers nostalgic for the maps of the past. Despite all the challenges these maps pose, they are much richer than the standardized maps that we consult today when we go on a road trip. Whatever their country of origin, modern maps all look the same: north at the top, distances to scale, highways wider than roads—any of us could continue this list. The papers in this volume analyze far richer maps from earlier times, maps that prompt us to reconsider the boundaries defining maps themselves.

INTRODUCTION

Philippe Forêt and Andreas Kaplony

Silk Road Studies

In our global village, the theme of the Silk Road is gathering greater interest than before for several reasons. It encompasses many concepts that cultural studies have made fashionable, such as communication, representation, and syncretism. It also evokes images of the oasis cities, humble caravanserais, and mighty imperial capitals where religious images and scientific information circulated in the ancient and medieval periods, before Europe considered itself the pivot of human history. The geographical area that separates the capital cities of ancient China from the Mediterranean and the Indian Ocean harbors is, of course, large. Much research has been done since the 1963 publication of Edward Schafer's *The Golden Peaches of Samarkand*. Scholars have published monographs on long-distance trade and travel, and museum curators have issued gorgeous exhibition catalogues that depict lost places in the heart of Asia. The present volume approaches the subject from a new angle, by looking at the journey of maps and images along the Silk Road to see how old ideas traveled and adapted themselves to new surroundings.

Our Approach

Visual knowledge was the focus of the conference on the transmission of maps and images along the Silk Road we held in Zurich in May 2004. We had the impression that maps and other images were an especially promising point of entry to study the iconic vocabulary of the Greek, Indian, and Chinese scientific traditions, as well as that of Buddhist, Muslim, and Christian ritual artifacts. This topic allowed us to explore the Silk Road's uniquely long communication network and investigate the diffusion of concepts and objects related to visual knowledge.

We decided to consider the transmission of knowledge both between neighboring civilizations and between generations within the same culture. To do so, we relied on the regional patterns of the Silk Road. The structure of this volume therefore mirrors the spatial division of the Silk Road network in three major areas—the *Buddhist Road*, the *Mongol Road*, and the *Mediterranean Road*. We also take into account the *Islamic World* where the Mongol and Mediterranean Roads met.

The *Buddhist Road* connected India to China through the Pamir passes and the oases of the Taklamakan and Gobi deserts. Buddhist monks and scholars took it to spread their teachings from the second to the eleventh centuries. Until the fifteenth century, the *Mongol Road* that superseded the Buddhist Road was maintained by Mongol states for their couriers and troops, as well as for the artists, scholars, and merchants they summoned to their separate courts.[1] The Mongol and the Mediterranean Roads met in the *Islamic World*, an area that functioned then, as it does today, both as a specific cultural region and as a center for worldwide interactions. The *Mediterranean Road* connected the Islamic and Christian Worlds together.

The Buddhist Road

To determine when exactly the Buddhist Road opened, *Nicolas Zufferey* discusses the impact of India and Central Asia on the art of Han China (206 BCE–220 CE). As information from and on the "Western Regions" entered China, reliable descriptions in Chinese sources continued to coexist with myths and legends on these places.

Natasha Heller analyzes a tenth-century mural map in Dunhuang, one of the gates to China, that depicts the peaks and terraces of distant Mount Wutai. A sacred mountain to Buddhist and Taoist pilgrims, Wutai is located between the believers' temporal world and the buddhas' pure lands. The temples depicted on the mural map

[1] We would have liked to include a chapter on the *Sogdian Road* because it provides another example of a Silk Road network. The East Iranian merchants who maintained it had colonies and settlements from the Korean border to Byzantium and Europe. For more information on the Sogdian Road, see Etienne de la Vaissière, *Sogdian Traders: A History*, Handbook of Oriental Studies, section 8: Central Asia, vol. 10 (Leiden: Brill, 2005).

at Dunhuang are associated with the rituals, etiquette, and emotions of pilgrimage.

On a more theoretical level, *Dorothy C. Wong* presents Buddhist cosmology as it developed from the sixth to the thirteenth centuries. Representations of an initial single-world/single-buddha system evolved into varied multiple-world/multiple-buddha systems. Chinese artists combined their traditional perspective with the Buddhist principles of frontality, centrality, and symmetry when they represented pure lands in a convergent multiple-point perspective. Their more abstract diagrams prefigured esoteric mandalas.

The Mongol Road

Jonathan Bloom writes on fifteenth-century Islamic Central Asia, when gridded maps and plans suddenly appeared. He explains how Greek and Muslim traditions were replaced by Chinese maps and plans that imitated models going back to the eleventh century. Although writing on paper spread immediately from China westward, four more centuries were needed for the diffusion of drawings made on paper.

In his comprehensive survey of horoscope diagrams in premodern Middle East and Europe, *Johannes Thomann* reveals a similar rupture between the Greek and Arabic traditions. Ancient astrological diagrams were circular, but square diagrams appeared only in the eleventh century. In the twelfth century, the standard diagram in both the Middle East and Europe was square and had rhomboid divisions. This layout had become common two centuries earlier in the horoscopes and divinatory texts of Central Asia and China.

Dickran Kouymjian describes an interesting episode in Armenian art. During the thirteenth century, East Asian motifs became prominent in Cilicia, a state allied to the Crusaders and a vassal of the Mongol empire. Armenian artists symbolized Christ with a lion and the royal couple with a dragon and a phoenix, a practice that mirrored how power and authority were depicted in China. Soon after this, an Armenian work on world conquest, the *Alexander Romance,* displayed miniatures similar to the East Asian iconography that the Mongol conquerors had sponsored.

The Islamic World

Two chapters on Islamic culture investigate what images state about internal diffusion in a single cultural area. *Andreas Kaplony* considers an eleventh-century Arabic map that is the oldest one of the Silk Road (outside China) and the first that applied geography to linguistics. Since the copy preserved is only one step removed from the original, we can see how copying altered the transmission of text and illustrations in diverging directions.

Yossef Rapoport examines an Arabic world atlas from the eleventh century that the Bodleian Library has recently acquired. Aesthetic reasons rather than topography may explain why the world map is a rectangle, the Indian Ocean has such a peculiar shape, and the regional maps represent rivers instead of the overland routes to Central Asia and India.

The Mediterranean Road

How knowledge has traveled between Muslim and European countries is well documented. Academics have focused either on the engagement with ancient Greek science in the medieval Middle East and Europe or on the diffusion of Western concepts and modern science to the Middle East. *Paul Kunitzsch* surveys the tools available in premodern times to Arabic-Islamic astronomers. They produced three-dimensional celestial globes to represent the sky and developed the astrolabe, a sophisticated instrument for portraying the sky in two dimensions. In their treatises they studied the theories of plane mapping but also made drawings of constellations and cosmic events. European influence resulted in the plane celestial maps of the seventeenth century.

Finally, *Sonja Brentjes* analyzes the Asian elements found in two Catalan portolan charts of the fourteenth century. Spotted horses and Islamic rulers were depicted according to Iranian and Central Asian models. The Catalan artists drew three rivers in West Asia (one of them imaginary) in ways similar to the Arabic-Islamic school of geography, but their maps differ markedly from the physical topography of the region. Her detailed inspection proves that texts only partially transmitted iconographic information.

We expect this work to be a useful complement to the monographs that have studied the history of cartography or iconography within a single cultural tradition. We have selected those papers from our conference that combine independent perspectives. We have avoided focusing on one period, topic, or region because we believe that a variety of approaches and methodologies best encourages the conceptual development of a common theme.

This volume addresses important questions about the Silk Road as an intellectual enterprise. Students in Asian studies may not object to being reminded that the borders between the subcontinents of Eurasia remained porous for at least fifteen centuries. With its consideration of Islamic and Buddhist cultures, *The Journey of Maps and Images on the Silk Road* will contribute, we trust, to today's discussion of our visual environment.

PART I

THE BUDDHIST ROAD

CHAPTER ONE

TRACES OF THE SILK ROAD IN HAN-DYNASTY ICONOGRAPHY: QUESTIONS AND HYPOTHESES

Nicolas Zufferey

The aim of this contribution is to discuss aspects of the transmission to China of visual knowledge through the Silk Road during the Han 漢 dynasty (206 BCE–220 CE).[1] The Han dynasty covered two periods: the Western 西漢 or Former Han 前漢 dynasty (206 BCE–25 CE), and the Eastern 東漢 or Later Han 後漢 dynasty (25–220 CE). It is mostly for the Later Han that we have visual evidence of relations between China and Central Asia. In what follows, I raise a number of questions about today's scholarship on this subject.

The topic is a difficult one because sources on visual transmission are rare and scattered. It has multidisciplinary and multicultural facets that require various competencies. Researchers (see Bibliography) generally focus either on the peoples living along the Silk Road or on the administrative and military aspects of Chinese rule in the "Western Regions" of the Han Empire. I address the topic as a historian of Han-dynasty thought who has studied that period through texts and images such as stone engravings. I am aware that Han culture was not homogeneous, and that political and religious notions taken for granted today had no meaning whatsoever in Han times. The commonly accepted idea of "One China" is awkward for Han times. Terms such as "Buddhism," "Taoism," and "Silk Road" must be used with caution because the many meanings we give them today often do not match historical realities. My perspective can be labeled skeptical or even revisionist to the extent that I do not accept at face value a number of conclusions drawn by other scholars who have analyzed individual images and visual representations.

[1] I am indebted to Michel Graa, who gathered a part of the documentation for this chapter, and to Elizabeth Kukorelly, who corrected my English.

In August 2002, the international edition of the *People's Daily* proudly announced that Christian motifs dating back to the Han dynasty had been found in China:

> Studies show that as early as 86 CE, or the third year under the reign of Yuanhe during the Eastern Han dynasty, Christianity entered into China, 550 years earlier than the world accepted time. When studying a batch of stone carvings of Eastern Han dynasty stored and exhibited in the Museum of Xuzhou Han Stone Carvings, Jiangsu Province, Christian theology professor Wang Weifan was greatly surprised by some stone engravings demonstrating the Bible stories and designs of early Christian times. . . . He also compared the designs on them with that of the Bible, composed of fish, birds, and animals demonstrating how God created the earth. Designs on these ancient stones displayed the artistic style of early Christian times found in Iraq and Middle East area while bearing the characteristics of China's Eastern Han times.[2]

These stone carvings would, of course, have been the best candidates for evidence of a transmission of visual knowledge along the Silk Road. The *People's Daily* story is, however, difficult to believe and, as is often the case with such spectacular announcements, nothing has come of it. A number of religious media abroad reacted to this finding,[3] but the Han-dynasty "Christian" designs vanished before scholars could examine them. The main problem with these carvings would have been attribution and interpretation. In this respect the story is emblematic of the extreme difficulties that historians encounter when they deal with the Western and Central Asian motifs that date back to the Han dynasty. The case of the Buddhist representations I discuss below exemplifies these challenges.

The Han Dynasty and the Silk Road

The Han dynasty ruled during the first period that saw significant contacts between China and the rest of Asia. The "Chinese" territory at the time was considerably smaller than the area covered today by the People's Republic of China. It matched roughly the eastern half

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[2] "Christian Designs Found in Tomb Stones of Eastern Han Dynasty," *People's Daily,* August 2, 2002.

[3] On this "Christian sensation," see, for instance, the website of Overseas Missionary Fellowship International, formerly the China Inland Mission, http://www.us.omf.org/content.asp?id=17281 (consulted in May 2004).

of China today, where 50 millions inhabitants used to live.[4] Even within these limits, vast regions south of the Yangzi (Changjiang) river remained outside the realm of Han civilization. The "Western Regions" (*xi yu* 西域) that the eastern network of the Silk Road crossed corresponded largely to what is today the Xinjiang Uyghur Autonomous Region. The Han court at Chang'an and Luoyang did not regard the area between the Great Wall and the Tianshan mountains as a natural or formal part of the empire, even if Han garrisons controlled it for security purposes. Since the Western Regions were conceived to be outside civilization, they did not belong to "what is below Heaven" (*tian xia* 天下) and therefore to the political sphere of the Han Empire. The Han expansion to the Western Regions resulted directly from the wars waged against the Xiongnu 匈奴 confederation, but the military protection of these far-off territories was considered a financial burden. The Han presence in the Western Regions was not effective before the end of the second century BCE, and it was threatened and even disrupted at times during the following centuries.

Commercial activities along the Silk Road during the four centuries of the Han dynasty were not continuous because political events in both the Han Empire and Central Asia strongly affected and even suspended trade and exchanges. Particularly favorable were the decades from 90–130 CE, when only four protagonists shared control of the whole transportation network: the Han Empire, the Buddhist Kushan Empire (which extended from Afghanistan to Xinjiang), Parthia (Iran), and the Roman Empire. The course of the eastern portion of the "Silk Road" during the Han dynasty was essentially the same as in later times: a common trunk went from Chang'an 長安 (present-day Xi'an in Shaanxi province) to Yumen 玉門 (Gansu). From there two main branches ran north (through Hami and Turpan) and south (through Dunhuang and Hotan) of the Taklamakan desert. They merged in the vicinity of Kāshghar (Kashi). From that city several routes crossed the Pamirs to reach either the Fergana or the Indus valley.[5]

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[4] For a map of the Eastern Han Empire, see Tan 1982: 40–41; Herrmann 1966: 14–15.

[5] Wood 2002: 11–14.

Textual Evidence on the Silk Road: The Standard Histories

Before addressing the question of the transmission of visual knowledge along the Silk Road into Han China, we need to say a few words about textual evidence because the Han people left texts on the area, unlike most ancient communities living along the Silk Road. Despite archaeological discoveries (some of which are discussed below), our knowledge of the history of the eastern section of the Silk Road is grounded largely on written sources rather than visual ones. This is true not only for China proper at the time, but also for the various peoples settled in what is today Xinjiang.

Relevant written sources consist mainly of the records devoted to the Western Regions in the standard dynastic histories, the *Hanshu* 漢書 (Book of the [Former or Western] Han Dynasty, compiled by Ban Gu 班固, 32–92 CE) and the *Hou Hanshu* 後漢書 (Book of the Later [or Eastern] Han Dynasty, composed by Fan Ye 范曄, 398–446).[6] These records are both precious and disappointing. They are valuable because they are often our only sources of information. They can be very instructive, as when they list the items traded along the Silk Road. However, they cause constant frustration. First, they are based on scanty evidence because Western Han historians relied mostly on the accounts of one man, the famous traveler Zhang Qian 張騫 (d. 114 BCE).[7] Second, their precision has often been difficult to assess. How can we interpret, for instance, the indication that Arsacid Parthia (*Anxi* 安西) was 11,600 *li* 里 (4,823 km, or 2,990 miles)[8] from Chang'an, the Western Han capital, or that the country of *Shache* 莎車 (also pronounced *Shaju*, Yarkand in modern times) in southwestern Xinjiang had a population of 16,373 inhabitants?[9] In the latter case, how did Chinese historians arrive at such a precise figure? Did they rely on the results of a local census similar to those held in the Han Empire?

[6] *Hanshu* 1962: 3871–3932, vol. 12, chap. 96; *Hou Hanshu* 1965: 2909–2938, vol. 10, chap. 88.

[7] On Zhang Qian's travels, see *Hanshu* 1962, vol. 9, chap. 61, trans. Hulsewé 1979: 205–239.

[8] *Hanshu* 1962: 3889, vol. 12, chap. 96. Chinese measurement units have varied through time and space. The Han dynasty *li,* however, was stable and was 415.8 meters long; Dubs 1955: 160 n. 7.

[9] *Hanshu* 1962: 3897, vol. 12, chap. 96.

The reliability of the official Han records decreases the farther west we move. We cannot expect detailed descriptions of the westernmost countries. Despite many collaborative efforts that have involved experts in geography, linguistics, history, archaeology, botany, and even biology, fundamental problems of identification remain to be solved for the many regions in Western Asia that the dynastic records describe.[10] Words such as *Xihai* 西海 (the "Western Sea") and *Wuyishanli* 烏弋山離 (the Chinese rendering for "Alexandria") may refer to different places in different texts (which cannot surprise us in the latter case, since several cities bore this name in ancient times).[11] Even for locales and peoples closer to the Han Empire, mysteries remain. For instance, historians still do not agree on the location of the Wusun 烏孫 tribal state (did it occupy the Ili valley southeast of Lake Balkhash?) that frequently challenged the Han in Central Asia.[12]

Han dynastic records are delicate to use because conveying factual information was not their only aim. The writers of these texts assumed ideological, political, moral, philosophical, and practical functions not always compatible with historical objectivity as we define it. The official histories had, moreover, an obvious Sino-centered perspective on Central Asian affairs.

Other Written Sources

Unofficial Han texts can also be relevant to the study of Central Asia. The *Shanhaijing* 山海經 (Classic of Mountains and Seas) is a mythological geography that provides interesting clues about representations of the "other" in Han-dynasty China. This book describes the inhabitants of the frontier regions as animal creatures rather than human beings.

The first translations into Chinese of Buddhist scriptures (largely from the Hīnayāna traditions) were from Prakrit sources, the vernacular language of northwestern India two thousand years ago, and not from Sanskrit, a sacred language. This suggests that the development of Buddhism in China resulted from privileged con-

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[10] Leslie and Gardiner 1982: 285–290.

[11] See *Hanshu* 1962: 3888, vol. 12, chap. 96, trans. Hulsewé 1979: 112; Leslie and Gardiner 1982: 288–290.

[12] *Hanshu* 1962: 3901, vol. 12, chap. 96, trans. Hulsewé 1979: 143.

tacts with the Gandhara-Bactrian region, which is now Pakistan and Afghanistan.[13]

How did written sources mention the Silk Road during the Han dynasty? No such concept existed at the time in China. The name *Seidenstrasse* ("Silk Road") was only coined in 1877 by the German geographer Ferdinand von Richthofen, so modern expressions such as *sichou zhi lu* 絲綢之路 or *silu* 絲路 cannot be found in Han-dynasty texts.[14] As already stated, Han scholars instead referred loosely to the Western Regions, a toponym that stands either for Xinjiang or for everything west of China proper. Apart from the sources mentioned above, clear allusions to the Western Regions can only very rarely be retrieved in Han-dynasty texts. Unlike in later periods (such as the Tang 唐 dynasty, 618–907), the geographical West was not an important theme in Han culture.

However, the West did provide an important source of mythological inspiration. We can therefore distinguish the two layers that simultaneously depicted the Western Regions: (1) a *realistic* representation, as reflected in official histories or acquired through diplomatic, military, and commercial contacts the Han had with these regions; and (2) a *mythological* version, in which the West was the residence of the fantastic creatures, half human and half animal, that the *Shanhaijing* describes. The Western Regions were also considered to be the abode of Taoist immortals and deities such as the Queen Mother of the West (*Xiwangmu* 西王母).[15]

The coexistence of these two layers, the realistic one and the mythological one, may surprise us. We might expect that increased familiarity with the Western Regions would have resulted in their demystification. Such was not the case. Several fictional places described in the *Shanhaijing* match sites referred to in realistic accounts; for instance, the Kunlun range, which Zhang Qian visited, is depicted in the *Shanhaijing* as the abode of strange creatures.[16]

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[13] Brough 1965: 587.

[14] In discussing the Silk Road, we may forget that silk was not only exported from China but also imported into the country. Chinese merchants brought home a "silk cloth of various colors," which was a light and transparent gauze manufactured on Syrian and other looms; Thorley 1971: 77.

[15] On Xiwangmu, see *Shanhai jing jiaozhu* 1983: 50, chap. 2.

[16] See *Hanshu* 1962: 2705, vol. 9, chap. 61, trans. Hulsewé 1979: 224, 238; *Shanhaijing* 1983: 50, chap. 2.

Although Han-dynasty scholars were sometimes aware of such contradictions,[17] our conclusion remains that trade and a growing knowledge of the Western Regions did not significantly alter the view the Han had of the "other." The Western Regions were more often seen as the dwelling places of strange animals and uncivilized people than as the realm of superior beings such as immortals (*xianren* 仙人) and deities. Han prejudice against the "barbarians" living outside the core area of Chinese culture was strong. At best, these aliens were considered untamed primitives. They were also depicted as disloyal and potentially rebellious peoples who would only reluctantly recognize the superiority of Han civilization.

Jia Yi 賈誼 (201?–169? BCE), a political adviser in the early decades of the Han dynasty, commented on the constant threat posed by the Xiongnu in the West: "The situation of the empire may be described just like a person hanging upside down. The Son of Heaven is the head of the empire. Why? Because he should remain on the top. The barbarians are the feet of the empire."[18] Such prejudice is still common in contemporary China, even in academic circles. In his *Trade and Expansion in Han China,* the modern historian Yü Ying-shih (certainly an authority on the history of the Han dynasty) consistently wrote of *barbarians* without quotation marks. For example, he stated that "in terms of economic life the difference between a Chinese and a barbarian in the Ch'un-ch'iu period [*Chunqiu* 春秋, 770–476 BCE], as later in Han times, was essentially one between an agriculturalist and a nomad."[19] This is certainly an unfair description of most of the peoples living in the Western Regions. Interestingly enough, ancient records were closer to the truth, for the *Hanshu* stated that "most peoples in the Western Regions were sedentary, lived in walled cities, cultivated fields, and raised domestic animals."[20] Recent archaeo-

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[17] "In the annals of Yü [Yu] it is written: 'The [Yellow] River rises in K'un-lun [Kunlun]; K'un-lun is over 2500 *li* high, and it is the place were the sun and moon hide from each other to create the brilliant lights.' After Chang Ch'ien's [Zhang Qian] mission to Ta Hsia [Daxia], men penetrated to the source of the [Yellow] River; can it be that they gazed upon that which is called K'un-lun? Thus, in describing the rivers and hills of the nine divisions of the world, the *Book of Documents* approaches [reality]; but the information given in the *Annals of Yü* and the *Classic of Mountains* is extravagant." *Hanshu* 1962: 2705, vol. 9, chap. 61, trans. Hulsewé 1979: 237–238.

[18] *Hanshu* 1962: 2240, vol. 8, chap. 48, trans. Yü 1967: 11.

[19] Yü 1967: 4.

[20] *Hanshu* 1962: 3872, vol. 12, chap. 96.

logical finds have shown that even the warlike Xiongnu 匈奴 and Wusun 烏孫 were not entirely nomadic. According to a number of scholars, the aggressive behavior of the Xiongnu during the Han period was a reaction to the loss of pasturelands that the relentless expansion of the Chinese Qin 秦, Zhao 趙, and Yan 燕 states caused in the third century BCE.[21]

Buddhist Influences during the Later Han Period

A rich archaeological record can complement our knowledge of the influences from Central Asia that played on Han-dynasty China. Such material has taken varied forms, from inscriptions on bamboo strips discovered along the Silk Road itself (for instance, in the Juyan 居延 area by Folke Bergman, a member of the Sino-Swedish Expedition of 1927–1935) to funerary iconography (such as that found in the Wu Liang Shrines, or *Wu Liang ci* 武梁祠) in present-day Shandong.

Unfortunately, no direct image of the Silk Road or Central Asia subsists in Han iconography. Thus we possess neither a general map of the Silk Road nor maps of portions of it. Small-scale maps were not unknown to the Han, as has been discovered during excavations,[22] and maps were deemed valuable in warfare. On the Silk Road itself, historical records suggest that Chinese expeditions in the West surveyed part of the territories explored,[23] but such maps are lost. The textual reports on the Western Regions in the dynastic histories were judged good enough to supply all the geographical information wanted. Historians apparently felt no need to add maps or refer to them in their accounts.

The Han dynasty lacks the Tang-style illustrations that portray foreigners in a realistic way. The only evidence of foreign iconographic influence on Han soil is linked to Buddhism. The importation of Buddhist themes and forms by Han China during the first and second centuries CE is an acknowledged fact, but it was not done on

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[21] For a synthesis of the debate on this question, see Di Cosmo 1994: 1092–1094.

[22] See Loewe 1977.

[23] *Hanshu* 1962: 3912, vol. 12, chap. 96, trans. Hulsewé 1979: 167.

a large scale.[24] Buddhism appeared under two main forms: (a) direct presence, when the Buddha himself or Buddhist themes were represented; and (b) a more diffuse "influence"—I use this word with reluctance—of Buddhist art on indigenous materials. Evidence of direct Buddhist presence is scanty and limited to a few places, mainly in Shandong and Sichuan, which is surprising. Moreover, the traces of Buddhism in Chinese art raise problems of dating, attribution, and interpretation. To illustrate these difficulties, let us examine a couple of Han-dynasty representations that relate to Buddhism.

China's oldest Buddhist images may be the carvings on the cliffs of Kongwangshan 孔望山 in Jiangsu province (fig. 1.1). According to the art historian Marylin M. Rhie, the carvings date back to the Later Han period (second century CE). She concedes that "the arrangement of both the reliefs and the boulder sculptures is puzzling and many of the figures have not yet been identified" but adds: "It seems clear that Buddhist and popular religious figures are mixed with secular figures."[25] This and the other conclusions that Rhie made in *Early Buddhist Art of China and Central Asia* are, in my view, debatable.

A first problem is the dating of the carvings. No known inscriptions at the site enable us to precisely date or identify the works. Rhie nevertheless follows "the opinion of some Chinese scholars"[26] as she assumes that the site dates from 150 to 200 CE. Even if a number of carvings possibly date back to the Han, they may not be equally old because the figures are very heterogeneous. We may suppose that several generations of sculptors worked at Kongwangshan because such was the case in Luoyang and Dunhuang, where we find comparable collections of carvings. A problem in Rhie's *Early Buddhist Art* and in other art history textbooks is their authors' boldness in dating ancient objects. Another example is the famous so-called Flame-

[24] Prince Ying of Chu's 楚王英 biography is the earliest credible record on the introduction of Buddhism to China (see *Hou Hanshu* 1965: 1428–1429, vol. 5, chap. 42). The prince worshipped the Buddha. The emperor approved his practice in a decree issued to the prince in 65 CE. From this time to the fall of the dynasty, the few records pertaining to Buddhism are not always reliable, an example being the story of how the Han emperor Mingdi (reign 58–75 CE) founded the White Horse Monastery near Luoyang. However, Buddhist temples were built and Buddhist art probably entered China during this period.

[25] Rhie 1999: 29.

[26] Rhie 1999: 29.

Shouldered Buddha (Arthur M. Sackler Museum at Harvard), which has generally been attributed to the fourth or fifth century but which Rhie dates to the end of the second century.[27]

A second problem is one of interpretation. Rhie states that the "Buddha" figure from the cliffs of Kongwangshan (fig. 1.1) and others of the same type are "clearly of Buddhist nature." In her view, it "reminds us of the Parthian examples of Tang-i-Sarvak" or "Kaniska Buddha coins."[28] In other words, this figure is for her a buddha with a number of Chinese characteristics. I find her conclusion questionable. The figure is very different from other supposedly early representations of the Buddha found in China, such as the one carved in the Mahao 麻浩 tomb in Maohaowan, Sichuan (second century CE, fig. 1.2). One cannot preclude the possibility that the Kongwangshan "buddhas" in fact represent other deities of Han-dynasty lore, such as the Queen Mother of the West. The Queen Mother of the West was commonly represented *en face* during the Later Han, and sometimes with a raised hand (fig. 1.3). According to Wu Hung, the author of an elaborate study of the Wu Liang Shrines, the frontal representation of the Queen Mother of the West was itself an innovation of the Later Han dynasty that Buddhist influence can explain: "The iconic composition in Eastern Han carvings, as represented by the Queen Mother picture in the Wu Liang Shrines, derived from Indian Buddhist art; the Han Chinese of the first century CE began to accept this format to portray the Queen Mother because by this time the goddess was viewed as a sacred figure and she was equated with the Buddha, who was also thought to be a deity of the West."[29]

Figure 1.1 may actually represent a buddha who is strongly influenced by Chinese perceptions, and perhaps by local representations of the Queen Mother of the West. Whatever the case, confusion between the Buddha and the Queen Mother of the West is possible at the beginning of the "Buddhist conquest" of China. The western location of the Queen Mother's abode, on a jade mountain to the west of the Kunlun range, may have encouraged confusion. According to some scholars, the mythology of the Queen Mother of the West has a foreign, perhaps Tibetan or proto-Tibetan origin because her cult first appeared in present-day Sichuan, probably during the first

[27] Rhie 1999: 71–94.
[28] Rhie 1999: 33.
[29] Wu 1989: 134.

Fig. 1.1. Buddha image (?). Kongwangshan cliffs (Jiangsu), n. X76. Later Han dynasty (?). Rhie 1999: fig. 1.9.

Fig. 1.2. Buddha image. Mahao Cave (Leshan, Sichuan), front chamber (lintel). Later Han dynasty. *Stories from China's Past* 1987: 198.

Fig. 1.3. Queen Mother of the West. Rubbing, pottery tomb relief, Xindu (Sichuan). Later Han dynasty. *Ba Shu Handai huaxiang ji* 1998: pl. 369.

centuries of the Han dynasty.[30] Opposing a "Chinese" Queen Mother of the West to "foreign" Buddhism would certainly be too simple.

In other words, we are almost unable to distinguish Buddhism from other forms of faith during the Han period. The Han dynasty's written sources constantly hint at the conflation or combination of Buddhism and local religion. As Rhie herself puts it, the Buddha was probably seen as one divinity among others, and Buddhism was not clearly separated from Taoism or Taoist beliefs until later.[31] As a result, instead of speaking of a Buddhist influence on Chinese art, we should speak of a coalescence of various forms that led to new representations.

While some "Buddhist" forms probably traveled along the Silk Road, others may have come to China through other channels. Some of the Buddha's early representations have been found in Sichuan. Archaeological evidence testifies to outside influences that entered that province from several directions during the last millennium BCE. Direct links between the Chinese and Indian subcontinents are plausible through Sichuan (rather than Gansu) because Chengdu is only 1,000 kilometers from the Brahmaputra. In passing, it must be stressed that Sichuan was not very "Chinese" during the Han dynasty.[32]

Another topic is the production of "Buddhist" works like the ones found in Kongwangshan. Who were the artists? Did they come from Central Asia or from India? Or, as is more probable, were they Chinese artists? Did foreign monks help them? Or did they elaborate freely on Buddhist lore as it was passed on to them? This would explain the many Chinese features present in such works. Here we

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[30] On possible Central Asian influences on the Queen Mother of the West, see Mathieu 1983: 77, 86. On her cult during the Han, see Loewe 1979: 86–126. See also Cahill 1993.

[31] Rhie 1999: 44.

[32] *Editors' Note*: In 316 BCE the Qin conquered the Sichuanese basin, which became a province of the Chinese Empire in 221 BCE. What "sense of identity," "becoming Chinese," and "Sinification" meant during the Han dynasty are open to debate. See Sophia Karin Psarras, "Rethinking the non-Chinese Southwest," *Artibus Asiae* 1 (2000): 5–58. Since 1904, when Paul Pelliot published "Deux itinéraires de Chine en Inde à la fin du VIIIe siècle" (*Bulletin de l'École Française d'Extrême-Orient* 4: 121–403), researchers have disagreed on the introduction of Buddhism in Sichuan through a Burmese road. See Chen Qian, "Preliminary Research on the Ancient Passage to India from Sichuan via Yunnan and Burma," *Social Sciences in China* 2 (1981): 113–149, and Elizabeth Errington and Joe Cribb, eds., *Crossroads of Asia: Transformation in Image and Symbol in the Art of Ancient Afghanistan and Pakistan* (Cambridge: Cambridge University Press, 1992).

can invoke the famous six-tusked elephants scene (fig. 1.4) from Tengxian 滕縣 (southern Shandong), which, judging from its technique and style, is probably from the Later Han. In Indian Buddhism, a six-tusked elephant was one of the countless previous incarnations of the Buddha.[33] Influential scholars such as Lao Kan are confident that the Tengxian image represents that story.[34] The problem is not with the representation of elephants, which did live in southern China during the Han period,[35] but with the representation of their six tusks, which differs from Indian images on the same subject. In Indian art the tusks are arranged in parallels, three on each side, whereas in the Tengxian relief only two of the three tusks on each side are parallel. Moreover, the two-dimensional flatness of the Tengxian stone looks very Han. The six-tusked elephants suggest that monks' tales or plain hearsay informed the local artists who made Buddhist works in Han China. In the words of Lao Kan, "It is likely that stories about the six-tusked elephant were imported into China, but its representation in Chinese art was not necessarily copied from an Indian example, for both show a considerable difference in style."[36]

We again meet difficulties when we assess the extent to which early Buddhism has influenced Chinese architecture. At least two scholars have suggested that the vertical dimension in building was rare before Buddhism because, to a degree, verticality would illustrate beliefs different from those that prevailed in ancient China. According to Erik Zürcher, an authority on the history of Chinese Buddhism:

> It seems that the Taoist scheme was based on the traditional Chinese five-fold pattern of the four cardinal directions plus the center; in other words: on a conception of a horizontal liturgical space. In this respect the introduction of Buddhist elements led to a new conception of space,

[33] "In Buddhist legend, the six-tusked elephant was one of the innumerable previous incarnations of the Buddha. While he was living as an elephant king in the forests of the Himalayas, his second wife died from jealousy and being reincarnated as a queen of Benares, charged a skilled hunter to kill the elephant king. The latter, being the manifestation of a bodhisattva, was impervious to any evil, but he allowed himself to be killed, offering his tusks to the hunter before he died. The queen, on seeing the tusks, also died, heartbroken." Lao 1954: 367.

[34] See Lao 1954: 365–368.

[35] Elephants inhabited large parts of China until the first millennium BCE. The character for elephant, *xiang* 象, is a pictograph that testifies to the presence of elephants in central China in ancient times.

[36] Lao 1954: 368.

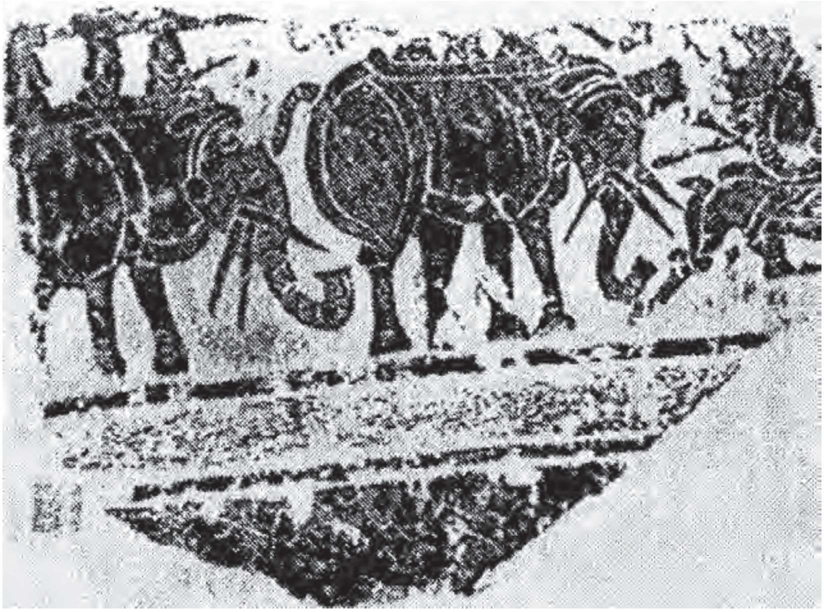

Fig. 1.4. Six-tusked elephants. Bas-relief from Tengxian (Shandong). Later Han dynasty (?). *Corpus des pierres sculptées Han* (1950), vol. 1, Pékin: Centre d'études sinologiques de Pékin: plate 113. Lao 1954: 368–369.

> as is shown by various schemes of superimposed heavens that, in spite of many distortions and misunderstandings, clearly reflected the Buddhist system of layers. But the whole conception of the divine world remained fluid in early Taoism, with many variations and attempts to compromise between the Buddhist pattern of three-dimensional space with a vertical axis and the older horizontal scheme, in which heavens, paradises, and even hells are situated horizontally in the four cardinal directions.[37]

Elaborating on this idea, the Chinese thought historian Anne Cheng wrote:

> The arrival of Buddhism in many respects marks the beginning of an era of radical novelty in Chinese history, not only in the religious sphere, but in all kinds of representations, and notably the representation of space. Just to give one example, the pagoda, with its floors and

[37] Zürcher 1982: 78.

> towering structure, represents a specific kind of architecture that was hitherto unknown in China.[38]

Such comments imply that the erection of pagoda-like buildings was a consequence of the introduction of Buddhism into China, and hence hints at Silk Road influences. We see undeniably more evidence of verticality in Later Han architecture than previously. The Buddhist pagoda type could have influenced the superb house models (see color fig. 1.5) that are generally dated to the Later Han. However, one should again refrain from drawing definitive conclusions. The model in figure 1.5 is usually dated to the first century CE, which might be too early for a Buddhist influence. The written and iconographic records demonstrate that pre-Buddhist China knew verticality, as is illustrated by the various watchtowers or multistoried city gates (*que* 闕) that adorn many Han-dynasty stones (fig. 1.6). Even if verticality gained a new momentum in China with the arrival of Buddhism, the pagoda style probably descended from pre-Buddhist Chinese vertical constructions such as the *que* watchtower, and not the other way around.

Conclusion

I would like to return to the connection between text and iconography. What was the aim of carvings like the ones found at Kongwangshan? Are we right in assuming that the functions—namely, devotion and piety—of such sites were the same in the Han period as during later dynasties? In fact, we do not know. The art historian Wu Hung has offered a very interesting interpretation of the purpose of the Wu Liang Shrines. He uses the text cartouches that supplement the iconography, and we cannot see how he could have reached his conclusions without these inscriptions. This is perhaps the main problem of iconography in ancient China: text came first and images second because images were considered inferior or ancillary. Illustrative of the primacy of text are the famous magical diagrams (*tu* 圖) frequently referred to in Han-dynasty sources. *Tu* diagrams were actually texts that sometimes arranged characters graphically and included a proportion of "real" iconography. The written character was magical in

[38] Cheng 1993: 33 (my translation).

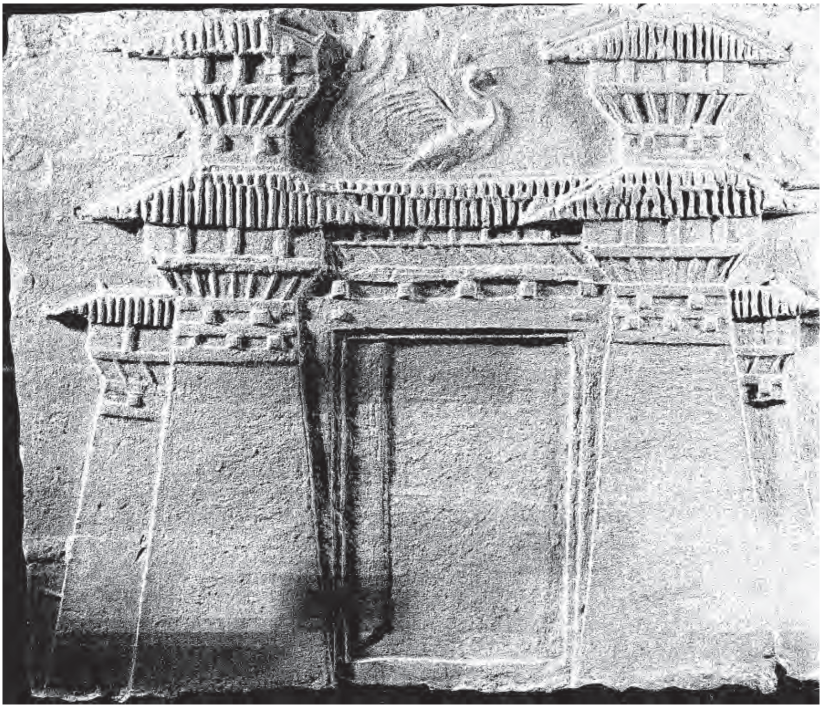

Fig. 1.6. *Que* gate. Pottery relief from Chengdu (Sichuan). Later Han dynasty. Chengdu Museum. *Stories from China's Past* 1987: 106.

ancient China. Wu Hung noted that the Song (960–1279) scholars who collected rubbings of the pictorial scenes carved on the walls of the Wu Liang Shrines were actually far more interested in the inscriptions that accompanied the portraits than in the images themselves. The Qing dynasty's (1644–1911) antique collectors who examined these carvings tried to locate and decipher their inscriptions to bridge the gap between what these images meant and what the ancient texts stated. Qing scholars tried hard to translate stone carvings into literature because they viewed Han pictures as texts. Hence we should keep in mind that images in ancient societies *could* have had a very different status—and thus different acquired meanings—than the ones we commonly ascribe to them today.

How did the Silk Road transmit maps, images, and visual knowledge to China during the Han period? With the scanty evidence we have, no definitive answer can be offered. At the end of that dynasty

Western motifs were imported by China, often under the form of Buddhism, but the question of *how* they were imported remains largely open. The interpretation of iconography without a context (which is only exceptionally provided by cartouches like those of the Wu Liang Shrines) is a risky enterprise for such ancient times, especially given the present state of the field. During the Han dynasty, the irregular exchanges between China and Central Asia left traces that are so incomplete that we cannot reach a clear understanding of how visual knowledge transited through the Silk Road. The Han situation differs markedly from that of the Tang dynasty, when the Silk Road played a major and well-documented role in both the material and cultural life of the empire.

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CHAPTER TWO

VISUALIZING PILGRIMAGE AND MAPPING EXPERIENCE: MOUNT WUTAI ON THE SILK ROAD

Natasha Heller

Maps are multivalent, layering different kinds of information and different registers of meaning within their frames.[1] For instance, in the common type of topographical map found in encyclopedias, atlases, and other reference works, physical features are depicted alongside administrative boundaries. The decision of how to show physical elements and social ones shapes the viewer's understanding and experience of the landscape in both ways. In examining any map, delineating these two different registers is important to understanding what the cartographer intended and how the map works.

The term "map" merits some unpacking, especially in the context of a discussion of Mount Wutai (五臺山) as it is depicted in Mogao Cave 61 in Dunhuang in western China. This mural is not a map in the same way that a road map is, but neither is it strictly a representation of landscape. The philosopher Edward Casey has engaged in a lengthy project on the idea of place in philosophy and the arts. In *Representing Place*, his work on the visual representation of place, he argues that maps and landscape paintings are "complementary" ways of representing the world. According to Casey, maps are practical in orientation, seeking to guide or induce action in the viewer. In contrast, paintings aid us in appreciating the world, and rarely demand more than eye movement. Maps aim to represent accurately the features of the world, whereas landscape paintings "attempt to convey the sensuous aspects of the environing place-world."[2] How-

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[1] J. B. Harley's seminal work has drawn attention to how maps represent not just physical space but ideas about that space. See especially "Texts and Contest in the Interpretation of Early Maps," and "Maps, Knowledge, and Power," in Harley 2001. Jeremy Black, Mark Monmonier, Denis Wood, and Matthew Edney have further developed Harley's thesis.

[2] Casey 2002: xiv.

ever, even in the Western tradition maps can include painted or drawn representations of the landscape, and though accuracy may be their primary aim, this can come in many guises. Accuracy may not refer solely to the scientific project of charting a space; rendering the sensuous or affective qualities of the landscape may indeed be part of a map's accuracy. The map of Mount Wutai discussed below is a hybrid of these two types of representation. That it is a map seems clear from the attempt to label sites and roads, although these depictions are of questionable practical use. Equally important is the representation of aspects of the landscape intended to be appreciated. The representation of Mount Wutai seems to fall close to Casey's definition of *chorography* as "the qualitative mapping of regions", as distinct from *cartography*, "the exact mapping of sites."[3] With this distinction, Casey wishes to emphasize the descriptive function shared by maps and landscape painting. While recognizing the places of overlap between these two genres, I use the term "map" to refer to the representation of Mount Wutai.

A map's function, of course, is not limited to the practical purpose of navigating the world: a map also divides that world into zones of power and activity, and grants the landscape meaning by highlighting those elements that have political significance, histories, or sacred potency. In the case of the map of Mount Wutai, there are several registers or layers of meaning. First, the *geographic* layer provides the underlying motivation for the map, and its basic organization, yet supplies limited information about "real" geography, or the topography of Mount Wutai. This mountain, one of the four sacred mountains of Chinese Buddhism, is located in Shanxi province, and is not a single mountain but a mountainous region with five distinct peaks or terraces from which it takes its name. Second, within the mural there is the *religious* register—the depiction of what is holy about Mount Wutai. Third, there is a *social* layer of meaning, including political content. Interpreting these different registers or layers of meaning is made more complex—and interesting—by the fact that the map represents a mountain far distant from Dunhuang, Gansu province, where the mural was found. The two places are

[3] Casey 2002: xvii. Casey has redefined the term. Historically, *chorography* referred to the mapping of a region, and fell between *topography* (mapping of a specific space) and *geography* (mapping of the world). See also his discussion of these terms in chapter 8 of his book.

separated by approximately 1,600 kilometers, a journey of perhaps two months in the period when the map was commissioned.[4] A map of a region closer to the viewer might recall a past journey or suggest a future one, whereas a map of a region farther away diminishes these possibilities, so that the map may indeed *substitute* for the place, guiding travels that take place solely in the viewer's mind.

Of these three layers, my primary focus here is on the social layer, and specifically on evidence of social interaction in the map. Although the social register is often called the hallmark of this map, it is in many ways less obvious than the religious register, which arguably dominates. Yet examining the presence of social interaction in this map is important for understanding what it meant to viewers at Dunhuang, an audience that likely included donors, monks, and other local elites. It is this register of social interaction that particularizes the image of Mount Wutai, making it more than just a holy site or the real-world pure land of a bodhisattva. The social interactions depicted make the map a guide to religious practice, its meanings and contexts. But before addressing this topic in more depth, a sketch of the history of the cave-temple and the mural is necessary. I will also briefly consider the other registers of meaning noted above.

Donors, Rulers, and Maps

The mural in Cave 61 (see color fig. 2.1) is the largest example of a map of Mount Wutai, and a uniquely rich source for information on architecture, pilgrimage, the development of landscape painting, and the perception of geography. We now believe that the cave was excavated between 947–951.[5] At this time, the Dunhuang region was

[4] The time it would to take to travel this distance is based on Ennin's record that it took five days to reach Mount Wutai from Taiyuan, and on the account in *Xi tianlu jing* 西天路境 (Stein manuscript number 383) translated in Schneider 1987: 30. For Ennin's estimate, see Marchand 1976: 166.

[5] This date is earlier than what was previously assumed in Zhao 1995: 12, an essay essentially the same as Zhao 1993. Dang and Wang 2003: 17–19 and Sun 2002: 13–14 all argue for the earlier end of the range, suggesting that the map, or a draft of it, must have been completed in 947–948. They base this conclusion on the fact that "the county of Yongchang" (永昌之縣) appears in the map. This refers to present-day Xingtang county (行唐縣) in Hebei. It was known as Yongchang from 936 until 948, when the name was changed back to Xingtang. While I agree that this

under local rule. From 786 to 848, Dunhuang and the surrounding area were under Tibetan control, which came to an end when the local general Zhang Yichao 張議潮 led an uprising to expel the Tibetans. Zhang was recognized as a "Restoring General" by the Tang dynasty, and his family ruled until 914. At that point, Cao Yijin 曹議金 wrested control from the Zhang family; as with Zhang, Cao's authority was recognized by the powers of the Chinese central plain, but he was essentially autonomous. Cao Yuanzhong 曹元忠 succeeded his father to rule for three decades in the mid-tenth century, and like his father was a fervent believer in Buddhism, using patronage of Buddhism to reinforce his legitimacy. Under the Cao family, twenty-six new caves were excavated at the Mogao site, and many more restored.[6] The Caos left a lasting imprint on Dunhuang, and their rule marks the last florescence at the Mogao Caves.[7] The principle donor of Cave 61 was Lady Zhai 翟氏, wife of Cao Yuanzhong. The cave, known also as "Mañjuśrī Hall" (文殊堂), is one of very few with the bodhisattva Mañjuśrī in the center as the principal deity. Mañjuśrī was one of the most important bodhisattvas in the Chinese Buddhist pantheon, associated with the quality of wisdom. He is often depicted astride a lion and holding a scroll, symbolizing intelligence.

Maps of Mount Wutai are well attested by this point in time. These depictions of Mount Wutai are usually seen as beginning with a monk named Huize 會賾, whom Emperor Gaozong 高宗 asked in 662 to visit the mountain to investigate the "saintly traces" to be found therein. Huize had a map (termed a "small scroll" or "screen," 小帳) of Mount Wutai made, and wrote an account of his visit; the map is the prototype of all later maps of the mountain.[8] The beginnings of the practice of mapping Mount Wutai are significant. First, mapping this sacred mountain was the result of an imperial com-

fact points to an earlier date for the map, the evidence strikes me as less than conclusive. To say that the map represents Mount Wutai as it was sometime before 948 does not mean that the map itself was created in that year; its maker could have relied on other maps or materials made at that time and subsequently transmitted westward.

[6] Whitfield et al. 2000: 87.

[7] For a discussion of the Cao family as patrons, see Fraser 2004: 20–23, 37, and passim.

[8] See Takakusu and Watanabe 1924–36 (hereafter this work is abbreviated as "T."), vol. 51: 1098 b22–1098c16.

mand, and was thus tied to the patronage, or control, of religion by rulers. The imperial command to investigate Mount Wutai can also be understood as part of more general efforts by rulers to know and represent the extent and detail of their realms. Mapping sacred mountains was therefore a religious instance of the broader practice of mapping the imperial realm. Second, the overt aim of Huize's trip was to investigate the manifestations of Mañjuśrī and other signs of the holy at the mountain. That is, this visit was prompted by doubt or questions about what had been reported at the mountain, which gave rise to the need to verify the mountain's sanctity through personal experience. Both the connection to local rulers and themes of doubt and verification reappear in the map of Mount Wutai in Cave 61.

There are records of several other maps of Mount Wutai, and Du Doucheng 杜斗城 concludes that there were probably painters specializing in such maps in Taiyuan 太原 in Shanxi province.[9] The Japanese pilgrim Ennin 圓仁 received a map of Mount Wutai during his visit there, and in 824 the Tibetans also requested a map, attesting to the geographic reach of the cult.[10] There are several examples of illustrations of Mount Wutai at the Mogao Caves: four dating from the mid-Tang (Caves 159, 222, 237, 361); two from the late Tang (Caves 9 and 144); and Cave 61 from the Five Dynasties. With the exception of Cave 61, they are all of the screen style, and appear either next to or below images of Mañjuśrī. They are also much less detailed. Similar examples of representations of Mount Wutai appear at the Yulin 榆林 Caves and at the Subei 肅北 temples, all in the Dunhuang region. Along with texts about Mañjuśrī and Mount Wutai found at Dunhuang, these visual representations are clear evidence of the penetration of the cult of Mount Wutai in the Dunhuang region. These other depictions of Mount Wutai are less detailed than that in Cave 61; they serve primarily as settings for Mañjuśrī in his Chinese context, and remind viewers of his various miraculous manifestations.

I suggested above that there are three layers of meaning to be addressed in this map: the geographic, the religious, and the social ones. Many of these images of Mount Wutai prioritize the religious

[9] Du 1991: 112.
[10] Zhao 1995: 14; Liu 1975: 5266.

layer of meaning, with a lesser emphasis on the geographical setting. The map from Cave 61, much larger in size, presents a more complex depiction of this sacred precinct. Looking at this map we can also distinguish three registers visually, albeit not cleanly divided.[11] The first of these is the *temporal world*, that of pilgrims and secular buildings, and it occupies the lower third of the painting. The middle third is the *sacred geography* of Mount Wutai itself, still this-worldly, although a landscape transformed. Above this, and intruding downward into the space of the mountain, is the *otherworldly realm* of gods, buddhas, and other spiritual beings. Cloaked in clouds and miraculous light, this realm intersects with that of the mountain. There is also a vertical division in the painting, with the images of greatest spiritual intensity at the center. In the context of the cave itself, the painted images of the statue of Mañjuśrī are positioned directly behind the statue of Mañjuśrī seated on his lion, and the screen behind this statue. That is, these images are not immediately visible to the viewer entering the cave.

Sacred Landscape

As already mentioned, the map is not an accurate representation of the geography of the area around Mount Wutai, or of the actual sites to be found on the mountain. Yet both the geography and the shorthand depictions of temples provide enough visual cues—aided by text identifiers—for viewers to read the map as a truthful representation of the landscape.[12] Although lining up the terraces, as the map does, is in some ways a misrepresentation, Ernesta Marchand argues that it indicates the relative distances between the mountains.[13] Moreover, the linear representation of the terraces would have been read by tenth-century viewers according to conventions of landscape painting in scrolls, in which "the viewer is asked to weave his way past the near distance, through the middle distance into the far distance and back while at the same time traveling across the unrolling scroll."[14] Marchand argues that although the landscape

[11] On this tripartite division, see also Marchand 1976: 159 and Wong 1993: 45.
[12] Marchand 1976: 169; Wong 1993: 36.
[13] Marchand 1976.
[14] Marchand 1976: 169.

was confined within a rectangle, the weaving of the viewer's gaze provided the means to perceive a more contoured, complex landscape. This mode of representation, along with the visual cues of temples and other sites, would elicit in viewers the history and legends surrounding Mount Wutai.

The religious layer of meaning has been considered in detail by the art historian Dorothy Wong.[15] This map shares many elements with depictions of Buddhist pure lands, the paradise-like realms presided over by buddhas. By this time Mount Wutai had become firmly associated with Mañjuśrī, although the details of this process are not entirely clear.[16] It is not surprising that Mount Wutai would be imagined in part as a pure land because it is Mañjuśrī's dwelling in China—or more broadly in this world—and the spatio-temporal locus of a bodhisattva. However, this image is unlike a pure land in several key ways. The first of these is the arrangement of the scene: the horizontal axis is far longer than the vertical one, while most pure land paintings are longer vertically. The central image of the Buddha is flanked by Mañjuśrī and Samantabhadra, a frequent pairing. Samantabhadra, often depicted on a white elephant, is the bodhisattva of practice, and as such is a fitting complement to Mañjuśrī. However, this central image hardly dominates the scene, and it represents a real statue hall. That is, it is depicted in a worldly context, not as an almost unimaginable place of supernatural glory and wonder. Though there are resonances with pure land scenes, this map represents a different understanding of landscape, in large part because there is the possibility of human action in this landscape in this lifetime.

The religious meaning of Mount Wutai is also conveyed in the representations of the miraculous signs one expects to see on a visit to the mountain. These include glowing orbs of light and multihued light, as well as miraculous figures. For example, the hand, foot, and head of the Buddha are shown manifesting themselves in clouds. These illustrations represent both visions that were attested to in accounts of Mount Wutai and potential visions for the pilgrim.

While pilgrims remark upon supernatural sights, they also make note of which temples they visit and their splendor, as Hibino Takeo

[15] Wong 1993.

[16] For a discussion of this process, see Gimello 1992: 99–100.

points out.[17] This brings us to one interface of the religious and social layers of meaning: in a sense, these temples and monasteries are sites of the holy, especially when enlivened by images of buddhas and bodhisattvas (who, of course, are really real, as the cartouches note, calling them "true bodies" 真身). In another way, however, these temples are products of the human world, and stand as monuments also to the devotion of others. Visiting these monasteries and witnessing the elaborate results of extensive labor, with the lavish donations implied by such a product, is also to participate in a community of piety; hence the pilgrim witnesses, and in some ways reenacts, the religious works of others.

Patronage and Pilgrimage

The social includes as well the political, and this aspect was not unimportant to the patrons of this map. Mañjuśrī was a bodhisattva with particular meaning for rulers of this time period.[18] This bodhisattva became particularly important with the rise of esoteric Buddhism in the eighth century, a phenomenon considerably facilitated by the monk Amoghavajra (Chinese: Bukong Jingang 不空金剛, 704–774). Aside from the choice of bodhisattva as the central icon, patronage by political leaders is encoded in another way in the mural. About a third of the way from each side of the mural, there is an entrance to the sacred precinct labeled as a "mountain gate," the place one had to pass through if coming from Hedong on the left, and Hebei on the right. Within the gates, diagonal lines draw the eye upward to the middle peak and the Mañjuśrī hall directly below it.[19] The section that is "outside" is indicated by a landscape with fewer buildings, but with an abundance of people. They are arranged in lines both to indicate groups traveling together and to suggest the constant stream of traffic that made its way to the mountain precinct.

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[17] Hibino 1958: 82.

[18] Wong 1993: 38–40.

[19] This spatial arrangement is interesting because the areas above what constitutes "beyond the gate" are also part of Mount Wutai. Following the roads used by pilgrims, the viewer's eye moves from the lower corners toward the center of the map, and then must return to the edge of the map to take in the temple complexes depicted above the road.

Two things are important here. First of all, recall that the center of the scene—the semantic hotspot of the mural—is not visible when the viewer first enters the cave-temple. If the viewer is to see it, he or she has to walk to the side-wall and then continue behind the screen of the statue. Thus in many ways the visual starting point of the map is one of these two corners.[20] The diagonal movement of the pilgrims into the mountains, which echoes the natural back-and-forth gaze of the viewer, also make these groups of pilgrims obvious starting points for the viewer's own visual travels. Moreover, these groups of pilgrims at the corners are not generic pilgrims but an entourage sent out by the local leaders. At right, a cartouche explicitly identifies one group of pilgrims as those sent by Hunan (fig. 2.2). This group tallies with the record in the *Guang qingliang zhuan* 廣清涼傳 of the donations sent in 947 by the ruler of Hunan—that is, the Five Dynasties state of Chu 楚.[21] Also on the right, a cartouche identifies a group as emissaries from Korea.[22] The group of pilgrims on the left, though not identified specifically, shares the formal look of those on the right (fig. 2.3). These groups feature officials on horseback, camels (and, on the right, donkeys) bearing loads of tribute, and triangular banners adorning the pack animals. There are other groups of official donors throughout the image: for example, a group approaches the Monastery of the Eastern Stupa (東塔常住之院) to the right of center.

Given that the wife of the local leader of Dunhuang donated the funds for this cave, the prominence of these groups of official donors is significant. Visually, our eyes accompany the group with their offerings to Mañjuśrī. Because they serve as the visual entrance into the mountains, they suggest that patronage by rulers provides access to the holy. The idea that access to the holy site is facilitated by

[20] It is difficult to speculate with any confidence on the viewing habits of visitors to the cave, but even if this were not true, the diagonal lines alone suggest visual pathways into the painting.

[21] See Hibino 1958: 78; *Guang qingliang zhuan*, in T. 51: 1122a25–26. *Wutai shan zan* 五臺山贊 is Stein manuscript number 5573. An annotated version of this text can be found in Du 1991: 2–17. For a facsimile, see *Yingzang Dunhuang wenxian* 1990–92: 54–55.

[22] The *Wutai shan zan* 五臺山贊, found among the manuscripts at Dunhuang, also notes that a prince of Silla was a pilgrim to the mountain. The presence of Korean pilgrims emphasizes the international status of Mount Wutai at this time. It was a site important not only to Chinese Buddhists but to the larger world of Buddhism as well.

Fig. 2.2. Detail of tribute mission from Hunan, from the Map of Mount Wutai, lower right corner. Courtesy of the Dunhuang Research Academy.

Fig. 2.3. Detail of tribute mission, from the Map of Mount Wutai, lower left corner. Courtesy of the Dunhuang Research Academy.

political patronage is, of course, literally true in the case of this cave: sponsored by the local ruling family, this mural represented the possibility of imaginatively visiting Mount Wutai. Bringing donations to the temples on Mount Wutai was a form of tribute, and thus positioned temporal rulers as subservient or lesser to the bodhisattvas. Because the map attempts to represent historical circumstances of Mount Wutai, Cao Yuanzhong and his family are not depicted in it. It is easy to imagine, however, the connections that viewers in Dunhuang might have drawn.

Mapping Experience

The groups of pilgrims dispatched to Mount Wutai by various rulers are well noted in the scholarly literature. The social aspect of pilgrimage has likewise been the topic of much scholarly attention, which has often focused on these social elements as a source for information about Mount Wutai in the tenth century, or about travel conditions and daily life.[23] Yet there is another kind of information contained in depictions of social activity—what I would term the *affective* content of the map—precisely because these depictions of social interaction represent the pilgrimage experience on a more personal level as well. The experience of pilgrimage was a fundamentally social experience, and the vast majority of the figures shown are in groups of two or more. In many cases the figures are presented in tandem, as if traveling together, and in a substantial number they are shown clearly interacting with one another.[24] Consider, for example, two travelers on the southern peak: one is pointing upward and looking back to his companion, sharing what he has just seen or perhaps acting as a guide (fig. 2.4). At the southwest gate on the Hedong route, two men cooperate in urging a recalcitrant donkey forward

[23] See, for example, Gao 2002: 112–114, on the function of the grindstone depicted next to the Lingkou Inn (靈口之店).

[24] Groups of figures, often in dynamic poses, are also found in *jingbian* 經變, illustrations of sutras. Such illustrations, however, are almost always part of the illustration of a narrative or parable from the sutra (or an elaboration of a parable) and thus are different in quality. These figures remain part of the world of the sutra, whereas the figures in the map of Mount Wutai exist in the world of viewer yet are for the most part unidentified. Thus the figures in the map can serve as analogues to the viewers, allowing them to see themselves in the map.

(fig. 2.5). And just below the western peak, a figure extends his hand to help a companion who has fallen; this is a concise expression of the mutual aid expected and given by pilgrims. To their left a monk gesticulates, perhaps lecturing or pointing out meaningful sites, while two lay pilgrims stand before him with hands folded. Not far away, two lay figures accompany a monk to a stupa, and to the right of this image two lay figures stand attentively before a monk in a high chair, likely receiving instruction from him. Inside the walls of the Monastery of the Eastern Stupa, lay people make offerings to seated monks. These images give some sense of how pilgrims and clergy may have interacted in the context of the pilgrimage experience.

Though not present in the same numbers as men, women are depicted as well. Several female figures are to be found off to the far right, near the manifestation of the Meritorious Goddess (功德天女現; Sanskrit: Hārītī), also rendered into Chinese as Helidi (訶梨帝), or Guizimu "Mother of Ghost-Children" (鬼子母). This illustration may indicate that a vision of this goddess was a particular aim of female pilgrims.[25] The painter also used conventions to demonstrate emotions colored by religion. On the northern peak, for example, there are five figures with their arms thrown up in amazement, responding to the dragons appearing on clouds above them. Folded hands, and figures that kneel and bow, suggest piety and reverence. In such ways the emotional tone of pilgrimage is depicted.

In all these cases, the experience of pilgrimage is not a solitary journey but is conditioned by the group around the traveler. Records of pilgrims also attest to this. In the mid-ninth century, the Japanese monk Ennin (794–864) traveled to China and included on his journey a pilgrimage to Mount Wutai. In the detailed diary of his trip, he pays careful attention to those he encounters on his travels. Ennin records the names of his traveling companions and lay people he meets, the warmth or chill of the reception he receives at various monasteries, and similar social encounters. A monk who has commissioned a painting of Mount Wutai to give to Ennin presents it by

[25] Hārītī was originally an evil spirit who ate other people's children. She had five hundred children of her own, and the Buddha hid one of these children from her, so she might experience sorrow like that of the parents whose children she had eaten. This experience persuaded her to convert to Buddhism. From that point on she was a protector of pregnancy and children, and thus a manifestation of Hārītī may have been an appropriate goal of pilgrimage for laywomen.

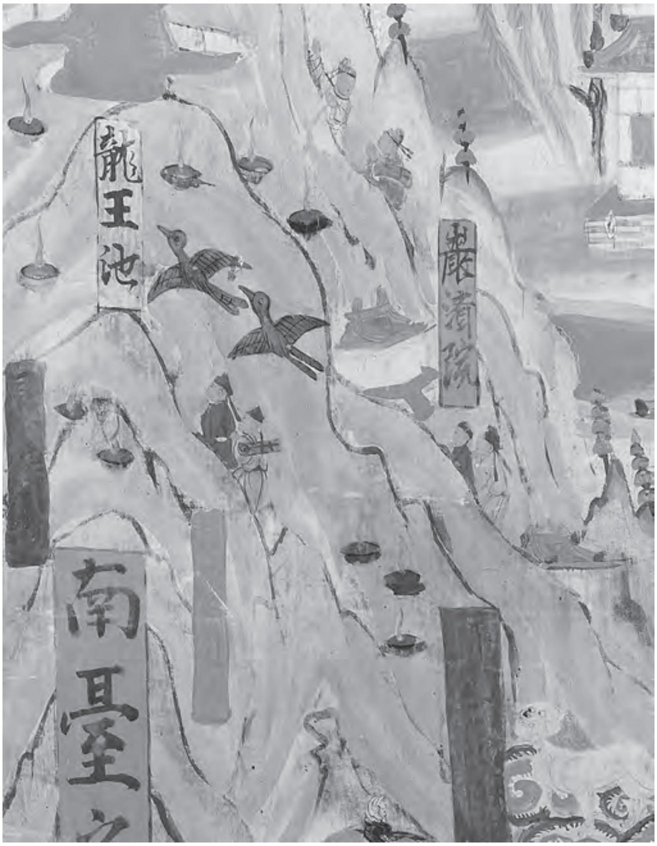

Fig. 2.4. Detail of pilgrims, from the Map of Mount Wutai, southern peak. Courtesy of the Dunhuang Research Academy.

saying, "I rejoice that I encountered you" and is saddened at their parting. Hosts are noted as being "attentive," "gentle of spirit," or "a ruffian," and Ennin observes that at one village monastery the "prior monk was not happy to see guests."[26] With just a few words, Ennin conveys his feelings about his travels, and these experiences, as much as the religious wonders he sees, make up the fabric of his record.

The social exchanges in Ennin's diary are with specific individuals: they have names and histories, and their journeys intersect briefly

[26] Reischauer 1955: 274, 276–277.

Fig. 2.5. Detail of donkey, from the Map of Mount Wutai. Courtesy of the Dunhuang Research Academy.

with Ennin's, then turn in different directions. The mural of Mount Wutai is likewise filled with evidence of the social world of pilgrimages, from travel routes and way stations to the pilgrims themselves, including the monks that populate the mountains and temples therein. Although a few are identified as important foreign emissaries or famous monks, most are anonymous. They represent not individualized encounters like Ennin's but the *possibility* of such encounters. These generic encounters suggest to the prospective pilgrim the types of experience he or she might expect.

Yet these social scenes are not merely a sort of visual Fodor's or Michelin guide. These depictions of social interaction not only reflect real pilgrimages to Mount Wutai, but also convey a religious meaning. As stories about Mount Wutai attest, encounters with others represent the potential for seeing Mañjuśrī himself no less than the

spots where numinous orbs are known to appear. Stories about the sacralization of social encounters center on doubt and mistaken identity. One of the most famous of these stories is that of Buddhapāli, found in the *Guang qingliang zhuan* and also in the *Wutai shan zan* 五臺山贊, a checklist in verse of the key sights that was discovered among the manuscripts at Dunhuang.[27] Buddhapāli was a monk from the Western Regions who traveled to China in the late seventh century. Upon reaching Mount Wutai, he was turned back by an old man with instructions to return to his homeland and retrieve the *Foding zunsheng tuoluoni jing* 佛頂尊勝陀羅尼經, a text of the esoteric tradition. When the monk came back with the text, Mañjuśrī in his true form met him and led him into the Vajra Cave, where Buddhapāli was said to remain ever after.[28] The story's importance for the artist of the map of Mount Wutai is clear: it is depicted twice, and the figures are larger than the other human figures in the mural, one pair dramatically so. One depiction is in the right third of the mural, above the Fahua Temple (fig. 2.6); the other is to the left of center (fig. 2.7). In both cases Buddhapāli is dressed as a pilgrim, with a pack on his back, and has his hands folded before him in a gesture of respect to the older man clothed in white.

Such visual emphasis is placed on this story because it contains the critical elements of the potency of Mount Wutai. First of all, the mountains are the goal of a pilgrimage undertaken by a monk from India, and this serves to emphasize China as a sacred realm of importance even to the land of Buddhism's origins. The kernel of the story, however, is the possibility of encountering a transformed Mañjuśrī. At their first encounter, Buddhapāli does not know who the old man is, and it is his gesture of respect and willingness to do the old man's bidding that ensures his special treatment from a revealed Mañjuśrī when he returns. Thus the story turns on faith in what lies beyond mundane appearances, and on the rewards that come to those with such faith.

Though here the main characters are monks, the same potential exists in more mundane encounters. In the map of Mount Wutai, just below Da Fusheng Temple we find one of the many small grass huts (fig. 2.8), with a cartouche identifying it as the hut of the poor

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[27] For this story in *Guang qingliang zhuan*, see T. 51: 1111a.

[28] Ennin retells this story. See Ono 1964: 63; Reischauer 1955: 246–247. It also appears in *Song gaoseng zhuan* 宋高僧傳, T. 50: 717c.

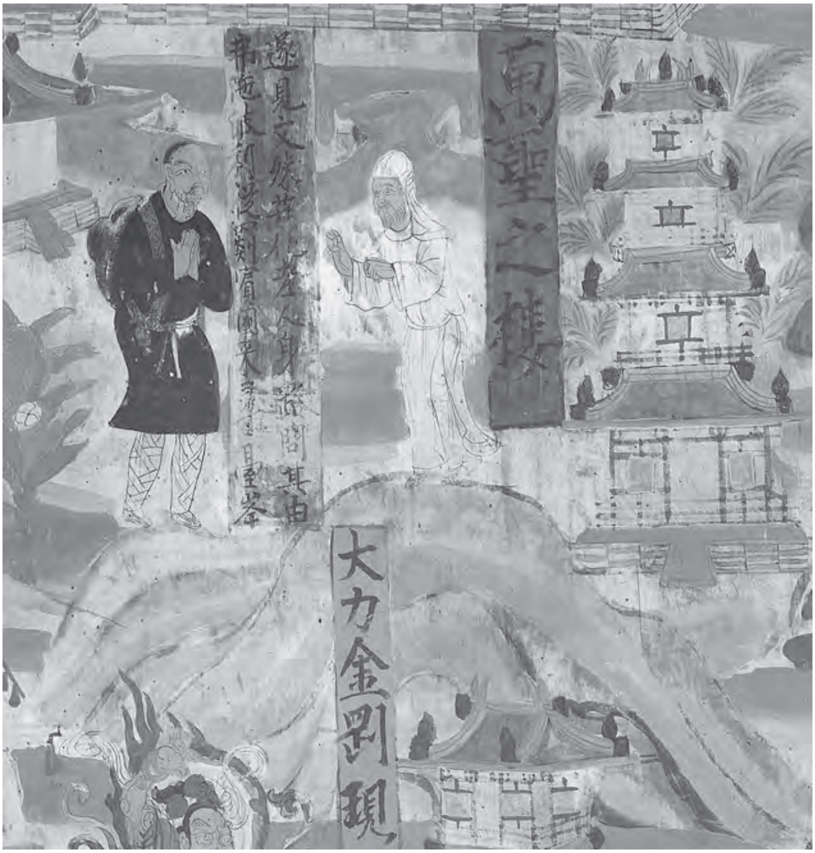

Fig. 2.6. Detail of Buddhapāli meeting Mañjuśrī, larger version, from the Map of Mount Wutai. Courtesy of the Dunhuang Research Academy.

woman (貧女菴). The story of the poor woman is also found in the *Guang qingliang zhuan* and tells of a woman who happened upon an annual maigre feast. Carrying two children and with a dog following behind, she pleaded for food. The monk provided sufficient portions for her and her children, but then the woman asked for a share for the dog as well. After the monk obliged, the woman informed him that she was pregnant and asked for yet another share. Now angry, the monk said, "You ask for the monks' food and are not satisfied. If the child is in your belly and not yet born, why must he eat?" Thus scolding her, the monk drove her off, whereupon the woman transformed into Mañjuśrī, the dog into his lion, and the two chil-

Fig. 2.7. Detail of Buddhapāli meeting Mañjuśrī, smaller version, from the Map of Mount Wutai. Courtesy of the Dunhuang Research Academy.

Fig. 2.8. Detail of poor woman's hut, from the Map of Mount Wutai. Courtesy of the Dunhuang Research Academy.

dren into his attendant Shancai 善財 (Sudhana) and the king of Khotan, who leads the lion. Ennin recounts the same story, but he has it taking place at a different monastery, with a lay patron as the ungenerous villain and omitting the children and dog.[29] The story of failure to recognize Mañjuśrī is in both cases given an ethical twist: the person who is unable to extend generosity to the lowly will not see through the bodhisattva's disguise. The monk or donor fails to act compassionately, and this lapse is revealed in the most dramatic way possible.

In his version, Ennin adds a comment that makes explicit the kind of behavior necessary to facilitate a vision of Mañjuśrī, who may show himself at any time:

> Those who enter these mountains naturally develop a spirit of equality. When maigre feasts are arranged in these mountains, whether one be cleric or layman, man or woman, great or small, food is offered to all equally. Regardless of rank or position, here all persons make one think of Mañjushrí.
>
> 入此山者自然起得平等之心。山中設齋不論僧俗男女大小平等供養。不看其尊卑大小於彼皆生文殊之想。[30]

Because Mañjuśrī has the potential to appear in any guise, at any time, everyone must be regarded as a possible vessel for the bodhisattva. On the one hand, this attests to the intense spiritual potency of the sacred mountain; on the other, it suggests how the mountain effects a change in social behavior. If any encounter *could* be a meeting with Mañjuśrī, all must be treated equally, and the rules of social differentiation must be suspended. Ennin takes up this issue at another point in his account:

> When entering the precinct of great holiness, even if one saw the lowliest of persons, one still did not dare have an attitude of disdain. If one comes across a donkey or other such animal, one's suspicions are also aroused—could this possibly be a manifestation of Mañjuśrī? Whatever comes before one's eyes, it all gives rise to thoughts of Mañjuśrī's transformations, and the holy ground naturally causes people to give rise to a mind of great respect toward the environs.

[29] *Guang qingliang zhuan*, T. 51: 1109b27–c20; Ono 1964: 96; Reischauer 1955: 258.
[30] Reischauer 1955: 257–258; Fukaya 1990: 414.

> 入大聖境地之時，見極賤之人，亦不敢作輕蔑之心；若逢驢畜，亦起疑心，恐是文殊化現歟。舉目所見，皆起文殊所化之想，聖靈之地，使人自然對境起崇重之心也。[31]

In this passage Ennin brings together the social, the religious, and the sense of place. The potent geography facilitates visions of the holy, but these visions may come in disguise. This in turn charges social interactions with new meaning, and conditions pilgrim's behavior on their journey. Every encounter presents an opportunity for holiness.

This passage from Ennin suggests how depictions of social interaction should be understood in the context of the map of Mount Wutai. Their function is not only or primarily informational or anecdotal; rather, it is intrinsic to understanding the experience of pilgrimage to Mount Wutai. What someone needs to know about Mount Wutai, especially at a far remove from the mountain itself, is not what inns to stay at or the sideline industries of these inns. Such information may add texture and detail to the imagined Mount Wutai, but more important is information on *how* to visit the sacred mountain—how to behave, what sorts of interactions one might expect, and, most importantly, the potential for such interactions to produce a personal experience of the holy.

Conclusion

The map of Mount Wutai in Dunhuang Cave 61 draws our attention to the many layers of meaning and function of such productions. This requires distinguishing between different registers of the representation—in this case, representations of geographic features, the sacred realm, and the social world. The map differentiates itself from strictly religious representations of Mañjuśrī's realm by including specific reference to the practical world of inns, roads, and travelers. Yet these depictions of the real world are not included solely for their factual value but also to emphasize social relationships. Their affective content—the way in which they convey emotion about the experience of visiting Mount Wutai—fleshes out the experience of the pilgrimage. Accounts by pilgrims such as Ennin make plain the emo-

[31] Zhao 1995: 20. For another translation of this passage, see Reischauer 1955: 225.

tional weight of such a visit, and how the geographical space of Mount Wutai alters social relationships. It is this aspect that is conveyed by the dynamic depictions of social interactions on Mount Wutai.

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CHAPTER THREE

THE MAPPING OF SACRED SPACE: IMAGES OF BUDDHIST COSMOGRAPHIES IN MEDIEVAL CHINA

Dorothy C. Wong

The philosophical concept of a "cosmos" transforms the chaos of our experiential world through the structures of space and time and, as W. Randolph Kloetzli notes, "it must not be understood primarily as the physical universe, but rather as structured reality at every level, whether physical or spiritual."[1] In his investigation of perspective construction and the relationship between art and science in the Western tradition, Martin Kemp remarks, "Naturalistic painting and science both present models of the world. Both kinds of model rely upon discovery and invention, and upon some form of systematic recreation of the investigator."[2] The underlying assumption of this observation is that the mode of perception that informs naturalistic painting is based on epistemology, namely, science. In Chinese Buddhist paintings of the medieval period (ca. sixth to tenth century), certain depictions of Buddhist cosmologies (especially pure land cosmologies) also achieve a remarkable degree of spatial realism comparable to that achieved in Renaissance and classical traditions in the West, and underscore a rational perception and ordering of the universe. Rather than being based in Western science, this specific mode of perception and representation corresponds to Buddhist cosmological conceptions or, more specifically, the Chinese interpretation and mapping of certain Buddhist cosmographies. Are these similarities in naturalistic representations of the universe, physical or metaphysical, in disparate traditions only accidents in history, or are there larger principles behind the correlates in conception, perception, and representation? The resemblance of the pure land perspective to that achieved in other traditions is but one of many attempts

[1] Kloetzli 1983: 19.
[2] Kemp 1990: 338.

to map various types of Buddhist cosmographies. What, then, are other modes of representation? And what are the factors that contribute to the selection of a particular mode of cosmographic representation?

The oldest conception of Buddhist cosmology is rooted in the Indian tradition, shared by both the Hindu and Jain religions. This cosmology, however, evolved as the Buddhist doctrine developed, expanding and transforming into a very different one in Mahāyāna Buddhism. Buddhist cosmology is a vast topic; here I outline a rudimentary classification that distinguishes the single-world system of pre-Mahāyāna Buddhist cosmology from the multiple-world system, or cosmology of innumerables, of Mahāyāna cosmology.[3] Within each category, certain systems stand out because of devotional or doctrinal developments. For example, the pure land cosmology of Amitābha/Amitāyus, which belongs to the multiple-world system, came to dominate Mahāyāna Buddhist practice in medieval China. Another strand of Mahāyāna Buddhist thought in China emphasized the worship of Vairocana Buddha, whose cosmology of the Lotus Repository World incorporated the earlier single-world system but transformed it into a fantastic, miraculous realm. These different Buddhist cosmologies are integral to the diverse theories of Buddhist soteriology set forth in various texts, and they coexist as competing schemes of salvific visions.[4]

Before the introduction of Buddhism, the Chinese possessed their own theories about the universe, albeit less systematic and fantastic than Indian speculations.[5] Buddhist cosmologies and images of cosmographic conceptions were also transmitted when the religion entered China, by way of land and sea routes, beginning in the early centuries of the Common Era. In the fifth and sixth centuries, when the Chinese production of Buddhist art began, the images or partial images of Buddhist cosmologies found in China, such as those depicted in Dunhuang murals (see below), primarily belonged to the

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[3] See Kloetzli 1983; a more succinct discussion is Kloetzli 1987. See also de la Vallée Poussin 1911 and Sadakata 1997. Broader discussions of Indian cosmology and cosmography include Sircar 1967, Gombrich 1975, and Schwartzberg 1992a (primarily on Hindu and Jain cosmographies).

[4] "Soteriology" refers to the doctrine of salvation, while "salvific" means "tending to save, causing salvation."

[5] For a discussion of ancient and medieval Chinese cosmological ideas, see Needham et al. 1959: 210–228.

single-world system of pre-Mahāyāna cosmology. Sometimes interacting with indigenous traditions, these foreign cosmological concepts and images coexisted with local ones. In India, Buddhism virtually disappeared after the twelfth century, and many cosmological artifacts have been destroyed, except for rare examples and those expressed in the form of stupas or architectural monuments. As a result, the early images of Buddhist cosmologies in China provide some evidence as to what the Indian ones may have been like and how they might have been transmitted to China. The images of Mahāyāna cosmologies, however, were developed independently in China, coinciding with local developments of Mahāyāna Buddhism in China from the sixth and seventh centuries onward. These later Chinese images of Buddhist cosmographies largely flourished outside of India, even though their contents were based on canonical texts that originated in India.[6]

This chapter includes discussion of both the single-world and the multiple-world systems of Buddhist cosmologies, and the images associated with each category. It also discusses the transmission, reception, and transformation of Buddhist images of cosmologies in China, most of which pertain to the single-world system of pre-Mahāyāna Buddhism. When examining the images of Mahāyāna Buddhist cosmologies that prevailed in China from the seventh century onward, I argue that the introduction of Buddhist cosmologies impelled Chinese artists to find new ways to visually represent the novel ideologies. For example, Chinese artists attempted the representation of illusionist three-dimensional space on plane surfaces in the pictorial arts of the Han dynasty (206 BCE–220 CE) through the use of a parallel orthogonal perspective. Incorporating this indigenous perspective with the compositional principles of Buddhist imagery, which emphasize symmetry and frontality, they arrived at a convergent multiple-point perspective that portrayed deep recessional space, in images of pure land cosmologies in particular. The acceptance of and emphasis on certain aspects of the Buddhist ideology thus had an impact on shaping and transforming the structure of time and

[6] The theory of purgatory and the cosmology of the Ten Kings of Hell are not discussed in the present context; though important in later Chinese Buddhism, this aspect of Chinese Buddhist cosmology developed relatively late in medieval China, incorporating considerable influences from indigenous concepts of the afterlife and mortuary practices. For a discussion of the subject, see Teiser 1994.

space in Chinese pictorial representations. In examining Chinese images of Buddhist cosmographies, I draw primarily on the rich repertoire of sculptures and paintings from the Dunhuang cave-chapels and nearby sites on the Silk Road. Dating from the fifth through the thirteenth century, the art of Dunhuang is predominantly Mahāyāna in content, although there are also subjects associated with Theravāda and Tantric Buddhism.

The Single-World System

The single-world system, which characterizes the pre-Mahāyāna Buddhist conception of the universe, has been more or less consistently described in texts of Theravāda Buddhism, especially the *Abhidharmakośa*. This cosmology is also known as the triple-world system because the world is divided into three realms from bottom to top: the realms of desire (*kāmadhātu*), form (*rūpadhātu*), and formlessness (*arūpadhātu*).

At the base, the substance of this universe is conceived as a single, circular disk surrounded by a wall of iron (*cakravāla*) on the perimeter. Circles of wind, water, and gold earth lie one above the other. Within the perimeter of the iron mountain is a series of seven circular, golden mountain ranges arranged concentrically, with Mount Meru, the world mountain or *axis mundi*, at the center.[7] The waters of the various seas fill the regions between the mountain ranges. On the outer rim of the great ocean are the four inhabited landmasses, located at the compass points: Pūrvavideha in the east, Jambudvīpa in the south, Aparagodānīya in the west, and Uttarakuru in the north.

Five classes of beings inhabit the realm of desire: gods (*devas*), human beings, animals, ghosts, and hell dwellers; sometimes a sixth category is added: *asuras* (or demonic gods). The beings of lower spiritual levels dwell in the bottom part of this realm. Mount Meru, encircled by the serpent kings (*nāgas*), rises above, and the gods inhabit the six heavens on top of it. Mount Meru thus connects both the heavens at the top and the hells at the bottom. Among the heavens the important ones are Trāyastriṃśa, the abode of Indra (the god of gods), located directly above Mount Meru; and Tuṣita, the

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[7] See Mabbett 1983.

fourth heaven, where a bodhisattva is born immediately prior to being born as a buddha. On top of the realm of desire are the seventeen heavens of the realm of form, and above that are the four "infinities" of the realm of formlessness.

This single-world system, also known as the *cakravāla* because of the circular iron mountain that surrounds it, is the oldest Buddhist cosmology. In this cosmology, the drama of salvation unfolds in cosmic time, measured in units of *kalpas*, or eons. The eschatological path is the transmigration of beings going through endless cycles of birth and rebirth, with the goal of reaching ever higher levels of existence until ultimate release (*nirvāṇa*) from the chain of causation. Because of this emphasis on the temporal scheme of salvation, one of the early images associated with Buddhist cosmologies that survive in India focuses on the cycle of birth and rebirth. Monastic regulations instruct that a wheel of life/existence (*bhavacakra*) be represented in the entrance hall of each monastery; one of the earliest extant examples of this is a fresco in the porch section of Cave 17 at Ajaṇṭā, which dates to the late fifth or early sixth century. Radially divided into six segments, the wheel depicts the six realms of existence (gods, *asuras*, human beings, animals, ghosts, and hell dwellers) in the realm of desire, hence reinforcing the chain of causation against the backdrop of the cyclical nature of cosmic time.[8] Images of the wheel of life did not seem to have much impact on mainstream Chinese Buddhist art but feature prominently in Tibetan art, which also abounds in various types of cosmographic depictions.[9] For example, a large wheel of life is depicted on the east wall of the entry hall (opposite a pictorial depiction of the cosmos on the west wall) of the Tabo Monastery in western Tibet, which dates to the tenth century.[10] Deborah Klimburg-Salter interprets that "While the Wheel of Life describes the nature of samsara, the different cosmologies sought to define the dimensions of the cosmos. Together they depict the microcosm and macrocosm. . . . Thus these images demarcated the boundary between the profane, outside world, and the sacred world—the

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[8] See Zin 1999, vol. 2: 26–27.

[9] See Schwartzberg 1992b: 625–629, fig. 15.18. The wheel of life, based on the *Abhidharmakośa*, has been incorporated into the elaborate Tibetan cosmographies, coexisting with that based on the *Kālacakra Tantra*; see Brauen 1997: 22–23, 51–79.

[10] Klimburg-Salter et al. 1997: 80–82. Similar depictions are found in other Tibetan monasteries.

world of the mandala [the interior of the monastery]."[11] The mural at Tabo Monastery seems to continue the Indian temple/cave-temple tradition, while the wheel of life is also a prominent theme in Tibetan *thangkas*. However, the theme of the wheel of life reached southwest China only in Song (960–1279) times in the Tantric context and was also depicted in the later periods.[12] It was probably through the context of esoteric Buddhism that the early Indian image of the wheel of life was introduced to China at this relatively late date.

Since Buddhist cosmology is an ethicized universe that has moral bearings, the single-world system presents the higher forms of heavens at the top and the lower forms of hells at the bottom, against the backdrop of Mount Meru as the world axis. Thus in addition to the wheel of life, which presents a scheme of salvation in cyclical cosmic time, another soteriological scheme exists that involves ascending or descending on a vertical path, with the stratified universe providing a field within which a being travels in stages on the long journey toward salvation in a vertical/temporal dimension. Joseph E. Schwartzberg notes, "The implication of this, from a cartographic perspective, is that the visual representation of the multi-dimensional universe in a two-dimensional image [i.e., a conventional map surface] sees it extended along a vertical rather than a horizontal plane."[13] This vertical format usually revolves around Mount Meru as its axis. A relatively late example is a fifteenth-century Buddhist map painted in Japan, which illustrates this cosmology diagrammatically (fig. 3.1a–c).[14] The illustrator uses a bird's-eye view and a level view alternately to depict the geographical features and buildings of this universe. When reaching the formless realm, the illustrator simply uses geometric circles to indicate the four heavens (fig. 3.1b). Similar examples abound in Thailand and other cultures where Theravāda Buddhism predominates.[15]

The early images of the single-world cosmology found in China, however, tend to be partial ones. Dating as early as the fifth and

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[11] Klimburg-Salter et al. 1997: 82.

[12] A prominent example is a relief carving of the wheel of life at Baodingshan; see Howard 2001: 6–10, fig. 9. See also Teiser 2006.

[13] Schwartzberg 1992a: 334.

[14] Rosenfield et al. 1973: 104–109, map 5.

[15] See Schwartzberg 1992c: 714–737, fig. 17.13.

sixth century, the majority of them center on the depiction of Mount Meru. An example is the mural on the north slope of the ceiling of Dunhuang Cave 249, which dates to the Western Wei dynasty (535–551; see color fig. 3.2). The ceiling of the cave-chapel is shaped like a truncated pyramid, with some resemblance to the local vaulted tombs dating to the Han and Jin (265–420) periods. Murals on the vaulted ceilings of these tombs usually portray the heavenly realm inhabited by celestial symbols, deities (most prominently the cultic figure of the Queen Mother of the West), spirits, and immortals. In Cave 249, we find a commingling of Indian and Chinese heavenly figures and motifs. The center of the north mural is dominated by an hour-glass-shaped Mount Meru that emerges from the ocean and mountain ranges at the bottom and soars to the top of the ceiling. Guarding it in front is the dark-skinned demonic god Asura, who has four eyes and holds the sun and the moon in two of his four hands. The summit of Mount Meru is rendered as a series of overlapping mountains in a palette of blue, brown, and beige. Above is a palace within a walled enclosure and gates, representing Trāyastriṃśa, the court of Indra. On two sides of Asura are a panoply of spirits: to the left are the thunder god (surrounded by a string of revolving drums) and the lightning monster (who holds a wedge-shaped implement); to the right are the wind god (with his wind bag) and the rain god (who blows rain). These storm gods are well-known nature spirits of Chinese origin, as are the winged immortals and hybrid creatures depicted in the mural. In the middle tier, however, the *kinara* (human-headed bird) and the *apsaras* (heavenly beings with flying scarves), to the left and right of Asura, are associated with the Buddhist realm. At the bottom, there are also bodhisattvas practicing within buildings. This configuration of a heavenly realm within the Buddhist cave-chapel thus accommodates both indigenous Chinese and Indian Buddhist conceptions of the cosmos, inhabited by spirits and beings from both traditions. The other three quadrants of the ceiling murals show a similar mix of Chinese and foreign motifs, although the identification of some figures remains in dispute.[16]

Cave 249 is an extraordinary example of how, at this early stage, imagery associated with both Chinese and Indian cosmologies already intermingled and coexisted. In other instances Mount Meru appears

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[16] See Bush 1974: 36–37; Dunhuang Academy 1980–82, part 1: pl. 97.

Fig. 3.1a. Upper part of Buddhist map in figure 3.1a, showing the four heavens in the formless realm as empty circles. Courtesy of the Arthur M. Sackler Museum, Harvard University Art Museums, Hofer Collection.

Fig. 3.1b. Lower part of Buddhist map, illustrated by monk Ryūyū. Japanese, Muromachi period (1392–1573), dated 1402. Handscroll, ink and color on paper. Courtesy of the Arthur M. Sackler Museum, Harvard University Art Museums, Hofer Collection.

Fig. 3.1c. Detail of figure 3.1a, showing the base of Mount Meru. Courtesy of the Arthur M. Sackler Museum, Harvard University Art Museums, Hofer Collection.

in a less hybridized context, as shown in relief on a number of Buddhist steles.[17] Mount Meru is also featured on the robe of a specific type of buddha identified as either Vairocana or the Cosmological Buddha.[18] In these examples, Mount Meru serves as a backdrop for the depiction of the encompassing universe described on the robe of the Buddha as the lord of the universe. The idea of mapping the universe onto a person's body—and hence the identification of the macrocosmic and the microcosmic—is rooted in the ancient Indian concept of the primordial or cosmic man (*puruṣa*) eulogized in Vedic literature, and in the depiction of Viṣṇu in Hindu art.[19] After all, the deification of the Buddha also stems from the concept of *mahāpuruṣa* (great person). The *Avataṃsaka Sūtra*, a developed Mahāyāna text, describes the cosmic or transcendent buddha Vairocana as being interchangeable with the universe itself (see below). The kingdom of Khotan on the southern Silk Route was a known Buddhist center associated with the creation and dissemination of the *Avataṃsaka Sūtra*. Among extant examples of Khotanese mural paintings there is an example of Vairocana, whose body is adorned with images of Mount Meru (or symbolically the Mount Meru throne) and other cosmic emblems.[20] Apparently in a Tantric context, this Khotanese example attests to the widespread representation of this specific iconographic type, albeit in different styles and contexts.

Also related to the single-world cosmology are depictions of specific localities in the heavens, usually because of associations with sacred events or deity cults. Trāyastriṃśa, the abode of Indra on the summit of Mount Meru, is associated with one of the famous events in legends of the Buddha's life, for Gautama Buddha visited this heaven to preach the Abhidharma to his mother, who had been born there as a *deva*. The Buddha traveled the distance of 68,000 *yojanas* between the earth and Trāyastriṃśa in three strides, at Saṅkīsa. This celebrated event is depicted in early Buddhist art, such as on a pillar of the north gateway of Sāñcī Stūpa 1, dating to the first century

[17] Wong 2004: 151–174, fig. 10.3.
[18] See Williams 1973: 120–124; Howard 1986.
[19] Gombrich 1975: 115–116; Williams 1973: 123.
[20] Williams 1973: figs. 1, 2; Bussagli 1963: 55, 58–61.

BCE.[21] In the relief, a vertical ladder connects heaven and earth, implying the Buddha's descent from Trāyastriṃśa; the Buddha is not shown, but his presence is suggested by his throne and the bodhi tree at both ends of the ladder. The absence of an image of the Buddha has been ascribed to the "aniconic phase" of early Buddhist art. Alternately, some art historians argue that such a depiction does not portray the Buddha's presence but commemorates the sacred site that is also a focus of pilgrimage.[22]

Another locality often shown is Tuṣita Heaven, the fourth heaven in the realm of desire and the abode of Maitreya Bodhisattva, the Buddha of the Future Age designated to succeed Śākyamuni. Maitreya is one of the oldest devotional deities in Buddhism, for his cult arose around the same time Śākyamuni Buddha began to be represented in anthropomorphic form at the beginning of the Common Era. Maitreya Bodhisattva is said to reside in Tuṣita Heaven, practicing and preaching while waiting to be reborn in the ideal kingdom of Ketumatī. Ketumatī represents a kind of utopia where all the conditions are right. There Maitreya will gain enlightenment as a buddha and hold three assemblies at which countless beings will gain salvation. Since the career of Maitreya stands for that of the prototypical bodhisattva, Tuṣita is where all bodhisattvas reside before their rebirth as buddhas. The cult of Maitreya was prominent because of its messianic appeal; besides, the promise of salvation in a future era tied into the soteriological scheme unfolding in cosmic time in early Buddhist cosmology. This cult spread, in the early centuries of the Common Era, from India through Central Asia to China as well as Korea and Japan.[23] Images of Maitreya ensconced in the palatial architecture of Tuṣita Heaven appear in Gandhāran sculpture of the third and fourth centuries (see color fig. 3.3), and such images were transmitted to China along the Silk Road, with examples found in the cave-chapels of Kyzil and Kumtara. When these images reached China, however, the Indian architectural forms with an arch and

[21] See Scanlon 1996: 96–97, figs. 7, 11. Virtually all the paradises of *kāmadhātu* have been represented on Sāñchī Stūpa I; Marshall and Foucher 1940, vol. 1: 226–230.

[22] Debates on the issue of aniconism include Huntington 1990; Dehejia 1991.

[23] For discussions of the Maitreya cult in Kushan India and its spread through Central Asia to East Asia, see Rosenfield 1967: 229–235; Lee 1983; Miyaji 1992; Kim 1997; and Wong 2004: 91–104, 155–159.

columns were interpreted in local architectural terms. For example, a relief sculpture of Maitreya Bodhsattva in Dunhuang Cave 275, dating to the fifth century, shows the bodhisattva in his typical cross-ankled seated position, enshrined in a niche marked by *que* gates to suggest the palaces in Tuṣita Heaven (see color fig. 3.4). *Que* gates denote palatial or funerary compounds in Han architecture, and this adjustment to employ a local architecture symbol is another example of the acclimatization of foreign images.[24]

The Multiple-World System

The cosmology of innumerable worlds represents a grandiose cosmic structure envisioned in Mahāyāna Buddhism. Beyond the perimeter of the single-world system, innumerable world systems are thought to be distributed throughout the ten regions of space. This expansion from one to multiple worlds was concurrent with the development from one to numerous buddhas in Mahāyāna belief, emphasizing the themes of multiplicity and plurality. Each world system is presided over by a buddha, and is called a buddha-field or buddha land (*buddhakṣetras*). In contrast to the emphasis on cosmic time in the pre-Mahāyāna cosmology, Mahāyāna cosmologies accentuate the drama of salvation in cosmic space, accessible in the numerous buddha-fields dispersed in vast expanses of space.

There are three types of buddha-fields: pure, impure, and mixed. A buddha-field is a sphere, a place that becomes pure and ideal because of a buddha's purification work through his vows and deeds. When a world is adorned, and thus "ornamented" (*alaṃkāra*), with the fruit of a buddha's good deeds, it becomes a pure land.

Geographically speaking, human beings live on the southern continent of Jambudvīpa, but this realm is also defined in terms of its level of purity, and is known as the *sahā* world (*sahāloka*). The *sahā* world is the most important of impure lands. It is impure because the beings there are still chained to the laws of causation and are subject to transmigration. It is also the abode of demons and other kinds of troublemakers that cause adverse events. Yet in the Mahāyāna

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[24] Later, under the influence of Pure Land Buddhism, there were attempts to associate Maitreya's abode with a pure land, but Tuṣita is located in the realm of form and thus cannot be considered "pure."

scheme, the *sahā* world is the "land of transformation" where Śākyamuni Buddha dwells and in which all beings are transformed. Thus the *sahā* world is considered mixed, alternately ornamented (pure) and unornamented (impure). This allows for the presence of great bodhisattvas who can act and save suffering beings there.

Both in Buddhist texts and in mural paintings, the *sahā* world provides the settings for *jātakas* ("birth stories"), *avadānas* ("great deeds"), the Buddha's life events, and the Buddha's sermons (such as at Vulture's Peak, where the Buddha expounded the *Lotus Sūtra*), as well as the abodes of the great bodhisattvas, such as Mount Wutai of Mañjuśrī and Mount Potalaka of Avalokiteśvara. In addition, there are the stories in various sutras that occur in the *sahā* world. Within this varied subject matter, one can distinguish two categories: (1) stories that have strong narrative content and involve both temporal and spatial dimensions, and (2) descriptions of the sacred abodes of deities that embody transcendent time. The former are represented in the narrative mode while the latter are often presented in the iconic mode or as a panorama (see discussion below).

The most prominent pure land is Sukhāvatī, the Western Pure Land of Amitābha/Amitāyus (see color fig. 3.5). It is a land of bliss, and the living beings there have neither physical nor mental pain. As an adorned place of spiritual splendor, its features are distinct from those of the *sahā* world. The ground is level and is enclosed on every side by seven railings and seven rows of palm trees, all decked out with nets of tinkling bells. Lotus ponds are covered with gold sand, contain water that is cool, clear, fragrant, and are afloat with lotuses. The railings, ground, and ponds are all made of precious substances: gold, silver, emerald, rock crystal, red pearl, sapphire, and mother-of-pearl. Heavenly beings and birds perform music and songs, while flower blossoms shower down regularly, bells chime, and cool breezes blow. Beings reborn there are endowed with a multitude of virtues and enjoy fine garments, ornaments, gardens, palaces, and pavilions. They can freely travel to other buddha lands and return, while the Buddhas of the Ten Directions come to glorify Amitābha Buddha in flying pavilions. Pertaining to the concept of *alaṃkāra*, or ornament, the sensuous images of sight, sound, smell,

and touch are metaphors for the panoply of wondrous qualities of a pure land.

Depictions of the Sahā World and Pure Lands

The topography of the *sahā* world includes mountains, valleys, rivers, and groupings of human communities in cities and villages. Because this is the world where humans live, Chinese artists largely drew on preexisting artistic conventions to describe its features. Since the Han dynasty, Chinese artists have devised the parallel orthogonal perspective to portray pictorial space. For example, on a Han tomb tile of a feast scene from Sichuan, this perspective is articulated through the orthogonal lines of rectangular objects such as floor mats and tables (fig. 3.6). The baselines of these objects are presumably aligned with the picture base, so the parallel inclination of their sides suggests an upwardly tilted ground plane, which in turn signifies extension into space beyond the picture plane. As the orthogonals slant upward, figures in the distance are depicted above those in the foreground. This way of disposing formal elements in a believable space is widespread in Han pictorial art.

Since the *sahā* world and the pure lands are distinctive in their features, artists devised ways to distinguish these two types of worlds pictorially. One of the rare examples for examining these two modes of representation is the relief on the back of a stele from Sichuan. Found in the Wanfosi temple site in Chengdu, Sichuan, the stele features two bodhisattvas in high relief on the front, and low-relief carvings on the back that include a complex landscape scene at the bottom and a pure land scene at the top (see color fig. 3.7). Dating to the sixth century, this represents one of the earliest depictions of a pure land, offering a rare glimpse into the beginnings of the new genre of pure land imagery that developed in China.[25]

The relief in the lower section features a number of scenes with figures and various actions set in a landscape of rolling hills, seashore, and overlapping mountains. A bridge in the center links the landscape section to the scene above, which clearly shows the iconography of a prototypical pure land: a lotus pond with reborn beings swimming in it, and across the pond a hieratic buddha's assembly,

[25] See Wong 2004: 151–179.

Fig. 3.6. Tomb tile showing feasting and entertainment scene, Chengdu, Sichuan. Chinese, Eastern Han period (25–220 CE). Zhongguo meishu quanji weiyuanhui, ed., *Zhongguo meishu quanji*, *Han huaxiangshi huaxiangzhuan* vol. Beijing 1988: pl. 241.

lush vegetation, and palace architecture. Despite a number of speculations, there is no evidence to firmly identify the subject matter of the narrative scenes. However, I have argued that the landscape relief depicts the *sahā* world. It includes scenes of human travails and adversity, such as shipwreck and being attacked by demons; but it also portrays religious activities, such as taking the bodhisattva vow, worshipping the Buddha, and a stupa. The path of spiritual practice is also a path of transformative action that leads to the possibility of rebirth in the pure land, symbolically represented by the bridge that links the two sections. The pictorial relief thus presents a vision of a soteriological scheme: the human condition, a program of spiritual practice, and the attainment of a religious goal.

This portrayal of the *sahā* world follows the naturalistic tradition of Han art in Sichuan. Depicted from a bird's-eye point of view, the mountains and valleys are shown on a tilted ground plane. Their silhouettes overlap and are then internally modeled, creating a succession of planes that give the illusion of spatial depth. However, instead of the Han perspective of parallel orthogonals projecting in one direction, the mountains with winding paths draw one's gaze upward along the relief to focus on the buddha's assembly in the top center. This mode of perspective construction is even more clearly shown in the pure land scene above. Instead of one set of orthogonals receding into the distance in only one direction, two sets of orthogonal lines proceed symmetrically from the sides, converging on the central axis at several points. The intention is to focus the viewer's eye and attention on the central icon of Amitābha Buddha presiding over the Western Pure Land. The bridges, the rows of trees, the listeners, and the palace architecture all reinforce this directed concentration, at the same time creating the illusion of a rational, three-dimensional space.

The distinctions between the spiritual realm and the temporal world are vividly shown, for the pure land is flat and adorned, whereas the human world, uneven and unadorned, is full of dangers and temptations. In this early attempt in the Chinese interpretation of pure land cosmology, it is apparent that the Han perspective convention has undergone a revolutionary change. Chinese artists have constructed a new perspective by rotating the parallel orthogonals on a vertical, central axis. Focusing on the Buddha as the icon, this convergent multiple-point perspective effectively portrays deep recessional space and an orderly world associated with spiritual purity. This breakthrough in perspective construction in the sixth century can be attributed to the influence of the iconic mode of representation that follows the principles of frontality, centrality, and symmetry, abundantly shown in Buddhist imagery. When the principles of symmetry and balance were applied to the traditional Han parallel orthogonal perspective, the result was two sets of orthogonals, symmetrically placed and angled, meeting on the central axis where the main icons are presented frontally.

By the seventh and eighth centuries, the panorama of grand pure land imagery had matured, and hundreds of these paintings have survived at Dunhuang (see fig. 3.5). Because of the increasing empha-

sis on devotional faith to deities, the murals usually only show the splendor of the pure land, without depicting the less-than-perfect conditions of the human world. In these eighth-century murals, the pure land is portrayed from a very high viewpoint, forcing the ground plane to tilt sharply upward. Descriptive details of the wonders of the pure land are extravagantly captured in vivid imagery, further enhanced with the magnificent Chinese-style palatial architecture and a mature, sensuous figural style. The convergent multiple-point perspective is more developed and grandiose, and experimented with in a variety of ways. In some compositions, the orthogonals at the sides direct the viewer's gaze away from rather than toward the center, resulting in the zigzag or so-called herringbone perspective. Emphasizing the salvific powers of the Buddha and bodhisattvas, the icons are presented as larger-than-life figures. Since pure land images were associated with the practice of meditation and visualization, the converging orthogonals enhance this ritual practice by directing the viewer's gaze to the central icon. The virtual space created in these images is so compelling and enticing that it draws the viewer and worshipper into this visionary world, assisting him/her in the realization of religious goals.

While the convergent perspective matured in the seventh and eighth centuries, the traditional parallel orthogonal perspective also developed into a more sophisticated rendering of pictorial space in the depiction of landscapes. Employing visual cues such as overlapping silhouettes of mountains, zigzagging shorelines, objects diminishing in size as they recede into the distance, and humans in appropriate proportion to nature, landscapes in this mode of representation were reserved for the many scenes of narratives which take place in the *sahā* world. They are usually placed as narrative vignettes along the sides or the bottom of the pictorial composition, such as the sixteen stages of Queen Videhi's meditation (see color fig. 3.8).

Between the *sahā* world and the pure lands are the sacred abodes of the great bodhisattvas such as Avalokiteśvara, Mañjuśrī, and Samantabhadra. The bodhisattva doctrine is a key tenet of Mahāyāna teachings, and the art of Dunhuang also documents the rising cult of bodhisattvas. Advanced bodhisattvas are portrayed as cult deities in their own right, presiding over the abodes where they exert their

spiritual influence. Some important examples include the figure of Avalokiteśvara as savior who heeds the calls of suffering beings, looming large over a naturalistic landscape (see color fig. 3.9). Another example is the sacred map of Mount Wutai presided over by Mañjuśrī in Cave 61, although in this case a sculptural icon of the bodhisattva stands in front of the panorama.[26] Bodhisattvas remain engaged in the world, and thus their abodes are still located in the *sahā* world. But because their intermediary abodes are the sacred spaces where transformative actions occur, artists adopted the iconic mode of a convergent perspective rather than the parallel orthogonal perspective to depict them. Unlike the flat land, lotus ponds, and palatial architecture of pure lands, however, the topography of bodhisattvas' abodes is mountainous. Though naturalistically portrayed, the mountains are also shown in the iconic mode, thus presenting a semi-real, conceptual landscape.

The invention of the convergent perspective in the depiction of pure lands and bodhisattvas' sacred mountains was brought about by the synthesis of native and foreign traditions, namely, the Han Chinese parallel orthogonal perspective and the Indian Buddhist principles of iconic composition. This new perspective resembles but is not fundamentally comparable to the linear perspective with a single vanishing point discovered in Renaissance Italy, which is based on a scientific understanding of the optics of a visual pyramid. The illusory space described in pure land images is only conceptual and not based on science, but it is nonetheless a means of symbolizing the order and serenity of a supernal world.

In 1927, the renowned art historian Erwin Panofsky published his seminal *Perspective as Symbolic Form*, in which he applied to the study of visual arts the theory of symbolic forms advanced by Ernst Cassirer, the philosopher and intellectual historian who a couple of decades earlier had published *The Philosophy of Symbolic Forms*.[27] To Cassirer, "symbolic forms" are the products of humans' unique symbolizing activity in different spheres of creativity, from art to myth, religion, language, and science. Panofsky argues that, from classic antiquity to the Renaissance, perspective construction is one of those

[26] See Wong 1993 and Natasha Heller's Chapter 2 in this volume.
[27] Panofsky 1991; Cassirer 1953–96.

"symbolic forms" in which "spiritual meaning is attached to a concrete, material sign and intrinsically given to this sign."[28] By this he means that the construction of a pictorial space is linked to the perspectival worldview—in other words, that the systematic ordering of visual phenomena is the outward expression of a specific conception of the world (namely, the objectification of the subjective). In classical antiquity, Vitruvius defines *skenographia* (the perspective representation of a three-dimensional structure on a surface) using the compass point as a center of projection for the eye of the beholder. In this scheme, the extension of the orthogonals does not merge as a single point but converges and meets in pairs at several points along a common axis.[29] In the Renaissance, the invention of the single vanishing point perspective derived from the scientific understanding of the visual pyramid.[30] Resting on a rational experience of empirical visual space, it creates a systematic, scientific perspective through which we can experience the "infinite" experiential world. To Panofsky, the Renaissance perspective construction represents the translation of a psychophysiological space into mathematical space. It is no more and no less a symbolic form than the *skenographia* of classical antiquity was of the Greco-Roman perspectival worldview. In a similar vein, we can consider the multiple-point perspective of pure land imagery a symbolic form, in that it translates and transforms the psychophysiological or Buddhist metaphysical space (the sacred space of the pure land cosmology) into a semi-rational, orderly virtual space.[31]

This distinctive Chinese pure land perspective was so compelling that it became the predominant mode for representing pure lands, not just the Sukhāvatī of Amitābha/Amitāyus. In turn, these pure land paintings were transmitted to Korea and Japan, where some of the surviving examples illustrate the grandeur of such visionary paintings.[32] This achievement of a naturalistic mode of spatial rep-

[28] Panofsky 1991: 40–41.

[29] Some oft-cited examples include the wall paintings in the House of Augustus in Rome; see Link 1991: 35, fig. 33.

[30] Kemp 1990: 9–52.

[31] See the discussion in Summers 2003: 471–473, 487–492.

[32] See the discussion of the Taima Mandala in ten Grotenhuis 1999: 13–32, pl. 1.

resentation was perhaps fortuitous, in that it derived from a synthesis of the native Chinese perspective and the compositional principles of Buddhist imagery. Nevertheless, the Mahāyāna soteriology that unfolds in cosmic space predisposed the artists to seek solutions in conventions pertaining to spatial representation. In contrast, the cyclical or vertical mapping of the single-world Buddhist cosmology (see fig. 3.1) pertains to the inherent emphasis on cosmic time in the Theravāda Buddhist cosmology.

After the tenth century, however, there was a tendency to portray the great bodhisavattvas in a less iconic pose, such as the popular Water Moon Guanyin—a special iconographic portrayal of Avalokiteśvara—seated in a pose of royal ease on a rock formation that symbolizes his abode, Potalaka, with the moon reflected in the waters before him. Depictions of the abodes of bodhisattvas also adopted a less formal, naturalistic mode due to the increasing influence of landscape paintings developed in China, such as depictions of the Water Moon Guanyin, Mañjuśrī, and Samantabhadra in the Yulin and East Thousand Buddhas cave-chapels.[33]

The Lotus Repository World

Finally, I want to examine the transcendent world described in the *Flower Ornament Scripture* (*Avataṃsaka Sūtra*, or *Huayan jing* in Chinese), one of the most developed Mahāyāna texts.[34] This world is the buddha-field of Vairocana Buddha, the transcendent and cosmic aspect of Śākyamuni. As discussed earlier, the representation of the cosmic or transcendent buddha Vairocana as interchangeable with the universe is already associated with the early transmission of this text from Central Asia to China. It is, however, the portrayal of the Avataṃsaka cosmology that concerns us in this section. Distinct from pure lands, Vairocana's buddha-field is known as the Lotus Repository World, described with the metaphor of a giant lotus. Technically Vairocana's world is still the *sahā* world, but it embraces all worlds,

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[33] Examples include the murals of the Water Moon Guanyin in Yulin Cave 2, and Mañjuśrī and Samantabhadra in Yulin Cave 3, in Dunhuang Academy 1990: pls. 138, 158, 165.

[34] The composite text was translated into Chinese in the early fifth century and again in the late seventh century.

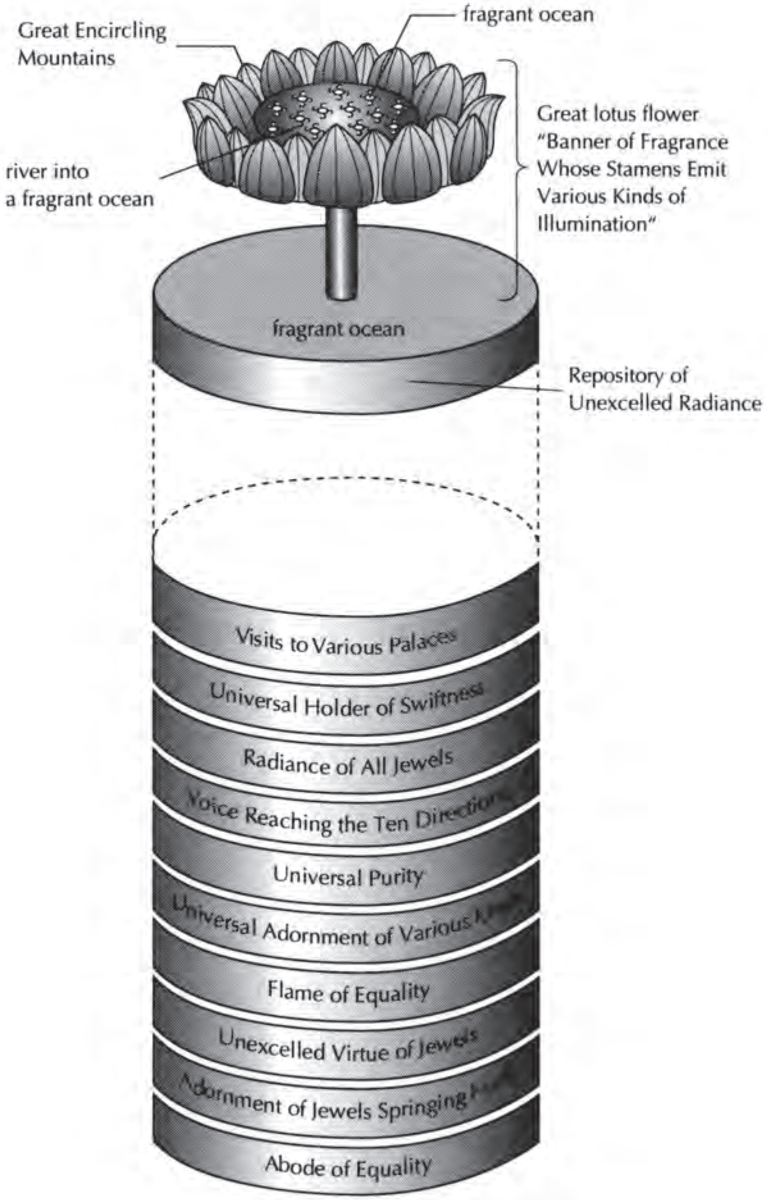

Fig. 3.10a. Diagram of the Avataṃsaka cosmology based on the *Avataṃsaka Sūtra*. A. Sadakata, *Buddhist Cosmology: Philosophy and Origins*. Tokyo 1997: fig. 25.

Fig. 3.10b. Diagram of the Avataṃsaka cosmology based on the *Brahmajāla Sūtra*. A. Sadakata, *Buddhist Cosmology: Philosophy and Origins*. Tokyo 1997: fig. 29.

including the triple-world system, the largest conception of space in pre-Mahāyāna Buddhism. As the abstract, cosmic form of Śākyamuni, Vairocana is omniscient and omnipresent, and the sutra emphasizes his multiplicity and all-pervading presence. His world is one of ineffable immensity and wonders, embracing countless numbers of world systems.

Based on the ancient cosmology, the universe with Mount Meru at its center contains layers upon layers of wind circles (fig. 3.10a–b).

Above these wind circles is a fragrant ocean, in which blooms a giant lotus flower. The flower ornament world is a world purified (and thus ornamented) by Vairocana. It represents a visionary cosmology that glorifies the cosmic aspect of the historical Buddha.[35] Two descriptions of this Lotus Repository World exist. In one version, based on the *Brahmajāla Sūtra* (ca. third century CE), Vairocana sits upon this thousand-petaled lotus, each petal of which supports a world. The Buddha incarnates into a thousand Śākyamuni buddhas, one for each of the worlds. On each petal, in each world, there are ten billion Mount Meru worlds. The Śākyamuni buddhas each incarnate into ten billion Śākyamuni bodhisattvas, who dwell within each of these Mount Meru worlds. Thus there are altogether one Vairocana Buddha, one thousand Śākyamuni buddhas, and ten trillion Śākyamuni bodhisattvas. The sutra also speaks of each atom of the Lotus Repository World as containing the universe of elemental cosmos, countless as the sands of the Ganges.[36] With such spatial metaphors for multiplicity and expansion, the cosmos is described in tandem with images of the Buddha's all-pervading nature. Flowers refer to meditative practice and good deeds, which produce spiritual fruits and seeds. The ocean of fragrant water symbolizes the "repository consciousness," a storehouse for experiential impressions.

A vivid representation of Vairocana Buddha and his Lotus Repository World is the colossal statue in the Tōdaiji (Great Eastern Temple) in Nara, Japan. Dating to the mid-eighth century, Vairocana Buddha sits atop a giant lotus. Although the buddha statue itself was destroyed and recast in the seventeenth century, the lotus pedestal is of original eighth-century date. On the petals are engravings that depict a simplified version of the Mount Meru world, with layers of wind circles and numerous buddhas representing Vairocana's incarnations in innumerable worlds.[37]

There are some thirty examples of murals and silk paintings at Dunhuang of the so-called *Huayan bian*, or "transformation tableaux," that embody or make manifest the entirety of the teachings of the *Avataṃsaka Sūtra*.[38] A tenth-century silk painting depicts the Buddha's

[35] Cleary 1984: 4.
[36] Cleary 1984: 204.
[37] See Rosenfield et al. 1986: 24, fig. 8.
[38] See Wong 2007.

magical appearances in seven mythical locations where he expounded the Huayan teachings in nine gatherings (see color fig. 3.11).[39] The Lotus Repository World (in this case based on the *Avataṃsaka Sūtra* rather than the *Brahmajāla Sūtra*) is depicted in the bottom part of the painting, separated from the assemblies by an arc of five-colored clouds. A large lotus emerges from the oceans of fragrant water, supported by two serpent kings (*nāgas*). The walled enclosures depicted within the lotus refer to the infinity of world systems it contains, with jeweled lights displaying an array of countless buddhas. In scriptural descriptions, this ocean of worlds is square and level, and the land within is also clean and level, set with boundaries made of diamonds, gems, and other precious materials. The image of this luminous world is likened to the jeweled net of Indra, the god of gods (and the ancient Vedic storm and warrior god); in his palace Indra hangs a net adorned with innumerable pearls. The lights of the pearls reflect upon one another, and the pearls in turn reflecting their mutual reflections. This intricate image of reflective light alludes to the interdependent nature of existence. Cosmic Vairocana, the progenitor of innumerable buddhas in innumerable worlds, is one and all; he is the universe itself.

Although these Huayan paintings include the depiction of a giant lotus, the main subjects portrayed in the *Seven Locations and Nine Assemblies* are (from left in color fig. 3.11):

Top register:
- 5th assembly (Tuṣita Heaven)
- 4th assembly (Suyāma Heaven)
- 6th assembly (Paranirmita-Vaśavartin Heaven)

Middle register:
- 7th assembly (Palace of the Dharma of Universal Radiance)
- 3rd assembly (Trāyastriṃśa, Vaijayanta, summit of Mount Meru)
- 8th assembly (Palace of the Dharma of Universal Radiance)

Bottom register:
- 2nd assembly (Palace of the Dharma of Universal Radiance)
- 1st assembly (Bodhigaya)
- 9th assembly (Jetavana Groves)

[39] The painting is published in Giès 1996: 39–45, pl. 1.

The seven mystical locations all occur within the realm of desire (*kāmadhatu*), the lowest sphere in the triple-world system in Buddhist cosmology. The realm of desire is further divided into heavens, earth (Jambudvīpa), and hells. In the Huayan scheme, the Buddha preaches the first assembly at Bodhigaya, where he achieved enlightenment, in the bottom center. The subsequent assemblies take place in the heavenly abodes of gods (including the second, seventh, and eighth assemblies). The most significant one, the third assembly, shown in the center, occurs at Trāyastriṃśa, Indra's abode. The fourth, fifth, and sixth assemblies take place in the upper levels of heaven and are shown in the upper register, culminating in the sixth heaven of Vaśavartin. The last or ninth assembly, during which the *Gaṇḍavyūha* (the last chapter of the *Avataṃsaka Sūtra*) was taught, occurs at the Jetavana Groves in Jambudvīpa, the site of the Buddha's first sermon. It is shown to the right of the first assembly, thus concluding the sequence of mystical visions in a kind of circular path.

This portable silk painting is identical in composition to a number of wall murals at Dunhuang, such as that of Cave 61, in the spatial-temporal arrangement of the assemblies.[40] Other Huayan murals are depicted on the sloped walls of ceilings, either with the whole composition fitted into the trapezoidal shape or divided into three slopes, each showing three assemblies. The only narrative elements found in Huayan paintings are derived from the *Gaṇḍavyūha*, the last chapter of this composite text that narrates the young boy Sudhana's pilgrimage to visit fifty-three sages in search of enlightenment. The narrative vignettes at the edges of some murals show scenes of Sudhana's pilgrimage, but this subject matter soon developed independently and became very popular in China and Japan after the tenth century.[41]

The assemblies are more or less identical and are static, with minimal details about place and narrative content, unlike the deep recessional space and descriptive details shown in pure land depictions. Nevertheless, subtly interwoven into this diagrammatic composition we can interpret the Huayan concepts of the three worlds (*triloka*) and the three bodies (*trikāya*). For example, the locations occur both at Jambudvīpa and in the heavens of gods. While the historical

[40] Dunhuang Academy 1995: 151, pl. 100.
[41] See Fontein 1967; Wong 2007.

locations provide the settings for the transformation body (*nirmāṇakāya*) of the Buddha, the mystical places in heavens furnish the environments for the apparitions of the Buddha's enjoyment body (*saṃbhogakāya*). The Huayan doctrine also describes the Buddha in absolute terms as the truth body (*dharmakāya*), embodied by Vairocana, the supreme lord of the universe. The world of Vairocana is the *dharmadhātu*, the realm of the Law, the absolute, symbolized by the lotus.

A second silk Huayan painting, of about the same date as the last silk *Huayan bian*, illustrates the *Daśabhūmika* chapter of the *Avataṃsaka Sūtra* (see color fig. 3.12).[42] Like the *Gaṇḍavyūha*, the *Daśabhūmika* was originally an independent text incorporated into the larger Avataṃsaka literature. It enumerates the ten stages of bodhisattvahood, shown in the painting as ten transcendent assemblies arranged into four registers, from left to right, top to bottom. In the bottom register, the two extra squares show the great bodhisattvas Samantabhadra in the lower left and Mañjuśrī in the lower right, flanking the assembly of Vairocana in the center. Vairocana, Samantabhadra, and Mañjuśrī are known as the Three Holy Ones of the Avataṃsaka doctrine. The presence of the young boy Sudhana among the entourages of Samantabhadra and Mañjuśrī makes reference to the *Gaṇḍavyūha*, suggesting that the painting embodies the meanings of both the *Daśabhūmika* and *Gaṇḍavyūha* chapters. In doctrinal terms, the painting is an exposition of the path of spiritual advancement, from a description of the progressive stages of bodhisattvahood to Sudhana's pilgrimage and realization of enlightenment under the guidance of the two great bodhisattvas.

The two silk Huayan paintings are similar in their use of a grid pattern to arrange the assemblies. They also share similar iconographic details and stylistic characteristics, suggesting that they were made about the same time. The French scholar J. Giès suggests that these two liturgical paintings are related to each other dialectically. Perhaps hung on temple walls facing each other as a ritual presentation, they set up a visual hierarchy analogous to the scholastic exposition of both a general theory and a scheme of practice. The delineation of the ten stages of bodhisattvahood essential to practice is shown in conjunction with the apparition of the buddhas' assem-

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[42] Giès 1996: 45–51, pl. 2.

blies in their mythical locations, structurally arranged according to those locations' relative positions in the Buddhist cosmos.

The compositional formula of arranging the buddhas' assemblies in a grid plan, the elimination of narrative details in favor of the iconic mode, and the diagrammatic configuration of spatial and temporal elements foreshadow the mandala-like cosmic diagrams in esoteric Buddhist art. As many scholars have noted, the geometric representation of the universe that shows the Buddha's manifold, all-embracing presence is a precursor to the development of esoteric Buddhism, and the origins of the esoteric mandala are rooted in such symbolism and mode of thinking and imagery. If the cyclical wheel of life, the vertical Buddhist map of the single-world system (see fig. 3.1), and the virtual space of the pure land cosmology (see fig. 3.5) are germane to their respective temporal and spatial emphases, then it is understandable that this abstract, diagrammatic mode of representation was devised to address both temporal and spatial dimensions in the complex Avataṃsaka cosmology.

The images of Buddhist cosmographies in medieval China examined in this brief overview include those introduced from India and Central Asia via the Silk Road and subsequently transformed, as well as those developed independently in China. The process of mapping Buddhist cosmographies was a diverse one that evolved in tandem with movements in Buddhist thought and practice, and also in dialogues with contemporary developments in secular landscapes and other kinds of artistic conventions. Above all, each of these modes of perception and representation is unique in translating into visual terms distinct structures of time and space in different Buddhist cosmologies. As specific spiritual meanings are assigned to the concrete, material signs, each type of these mappings of Buddhist sacred spaces is individually seen to be a "symbolic form."

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PART II

THE MONGOL ROAD

CHAPTER FOUR

LOST IN TRANSLATION: GRIDDED PLANS AND MAPS ALONG THE SILK ROAD

Jonathan M. Bloom

Several years ago, while writing a book about the history of paper in the Islamic lands, I was struck by the grids, or networks of evenly spaced horizontal and vertical lines, that appear for the first time in the Islamic lands on some architectural plans and maps produced in Central Asia during the "long" fifteenth century. At this time, much of the region was under the control of the Timurids, and contacts between the Eastern Islamic lands and China were unusually strong. Of course, Islamic traditions of architectural representation and cartography are normally associated with the Mediterranean lands, where plans and maps with graticules had already been used in classical times. Was this simultaneous appearance of gridded maps and architectural plans in fifteenth-century Central Asia merely a coincidence? Was there any relationship between the two kinds of representation? When I wrote my book I was unable to follow up these intriguing questions, but a conference on maps and images and how they have transmitted visual knowledge along the Silk Road seemed a perfect opportunity to explore the question further.

A Brief History of Paper

Paper, a suspension of cellulose fibers collected on a screen and dried into a mat, was invented in China a few centuries before Christ.[1] Originally used there like a textile for wrapping and other purposes, paper was soon discovered to be a versatile medium particularly suitable for receiving writing and drawing, as it was lighter and less restrictive than the narrow bamboo tablets that had been used pre-

[1] Needham and Tsien 1993: 38–42.

viously for writing texts, and much cheaper than the silk cloth that had been used for drawing and painting. In the following centuries, Buddhist monks and missionaries carried paper and papermaking skills throughout East, Southeast, and eventually Central Asia, where Muslims first encountered it when they conquered the region in the late seventh and eighth centuries of the Common Era. In short, one might say that Ferdinand von Richthofen, the professor of geography who coined the term *Seidenstrasse*, had it *nearly* right, but that he should have called it the *Paper* Road, for one could argue that paper had a far great impact on the history of human civilization than did silk. In China, papermaking soon encouraged the development of printing: the earliest known printed book on paper is the *Diamond Sūtra* (*Jingang jing*), a horizontal scroll dated 868 and discovered in the Caves of the Thousand Buddhas (*Qian Fo dong*) at Dunhuang in western China (and now in the British Library in London); the earliest known printed text is an early eighth-century miniature charm scroll, also printed on paper, that was discovered in a pagoda in Kyongju, Korea, in 1966.[2]

To the west, the rapidly expanding Muslim bureaucracy, which attempted to govern the vast region stretching from the Atlantic coast of North Africa to the banks of the Indus River, found a ready use for the new medium of paper, which was much cheaper and more widely producible than either parchment or papyrus, the two major writing materials of the Mediterranean lands in antiquity. Paper mills were established in quick succession over the course of the ninth and tenth centuries from Samarqand to Baghdad, Damascus, Cairo, Fez, and Cordoba. Eventually, European Christians in Spain, Sicily, and Italy learned of paper from the Muslims and began to make it themselves in the thirteenth century, providing one of the foundations upon which Gutenberg's print revolution of the fifteenth century was based.

In the Islamic lands, where printing was known but not much used, the ready availability of paper led to the transformation of Islamic culture, as the verbal-memory-based culture of early Islam was rapidly supplanted by a text-based culture in which the written record reigned supreme. The explosion of Arabic literature on all subjects—from theology to geography, cookery, and romance—in

[2] Bloom 2001; Needham and Tsien 1993: 149–151.

ninth- and tenth-century Baghdad has previously been ascribed to the generally high level of culture and prosperity in Abbasid society; in my opinion, no small part of the accomplishment was due to the ready availability of paper, which made writing and reading accessible to much larger audiences than ever before.[3]

Oddly enough, in the Islamic lands, most of the visual arts did not enjoy the full effects of the paper revolution for another few centuries. Although Arabic calligraphy was transformed by the introduction of paper, before the thirteenth century books were rarely illustrated, and paper played a very small role indeed in the conceptualization and realization of works of art in such other media as ceramics, metalware, architecture, and architectural decoration. In other words, architectural plans were rarely if ever used. As in medieval Europe, before the thirteenth century builders in the Islamic lands normally planned out buildings on the spot and used the parts of the building they erected first as a full-scale model for subsequent parts.[4] The earliest surviving architectural plan in the Islamic lands is an inscribed plaster slab discovered in the ruins of the Ilkhanid palace at Takht-i Sulaymān in northwestern Iran. It has been interpreted as the *aide-mémoire* used by the builders to construct a *muqarnas* vault at the site, and fragments of the molded plaster *muqarnas* elements from the vault were actually found there.[5] The vault at Takht-i Sulaymān would probably have looked like the vault over the tomb of ʿAbd al-Ṣamad at Natanz, constructed in 1307–1308, and it is no wonder that the workmen needed some instructions about how to put such a complex structure together.

Gridded Plans

The earliest known gridded architectural plans on paper from the Islamic lands are several drawings, kept at the Institute of Oriental Studies at the Academy of Sciences in Tashkent, that have been attributed by Soviet scholars to an Uzbek master builder or guild of architects practicing in sixteenth-century Bukhara.[6] The drawings,

[3] Bloom 2001: 91–123.

[4] Paul 1997.

[5] Harb 1978.

[6] Discovered as fragmentary scrolls in the collection of the Bukhara Museum in the 1930s, the drawings were cut up, restored, and pasted onto separate cardboard

which once formed parts of scrolls, comprise several grid-based ground plans and projections for *muqarnas* vaults, as well as patterns for the two-dimensional geometric ornamentation typical of the Islamic architecture of Central Asia in the sixteenth and seventeenth centuries. Based on the quality of their rag paper, some of the drawings have been attributed to the sixteenth century, while others may well date to the seventeenth century or later.[7]

The Tashkent drawings took on added significance with the discovery and publication of the Topkapı Scroll, a 30-meter long collection of 114 architectural drawings combined from two or more scrolls originally produced in western or central Iran, possibly Tabriz, during the late fifteenth or early sixteenth century. These drawings are thought to record the workshop practices of builders and decorators working in the Timurid-Turkmen cultural orbit, although they show no evidence (such as fingerprints, stains, or tears) of ever having been used. The drawings eventually found their way into the Ottoman imperial treasury collection, whether as booty from the Ottoman conquests of Tabriz in 1474 or 1514, or as part of the equipment of the Timurid-Turkmen builders and decorators who were invited to Istanbul in the 1470s. In any event, the drawings had little relevance for Ottoman builders and seem to have remained unknown in the palace library until they were rediscovered in the twentieth century.[8]

The sophisticated visual language of these drawings led Gülru Necipoğlu, the scholar who published the Topkapı Scroll, to investigate the origins of architectural representation in the Islamic lands. Although no actual paper drawings are known to have survived from earlier centuries, the evidence of the buildings themselves indicates that some builders and decorators in the eastern Islamic lands must have used drawings on paper from the thirteenth century onward. The layout of surviving buildings, particularly those erected by Timurid patrons in Iran and Central Asia, unequivocally indicates

sheets at the Leningrad Academy of Sciences on the initiative of A. A. Semenov, who was curator of manuscripts at the Tashkent State Public Library. After they were transferred to the Tashkent library, Nikolai Borisovich Baklanov classified them in the early 1940s and published two brief articles (Baklanov 1944; Baklanov 1947) on them.

[7] Necipoğlu 1995: 9–10.

[8] Necipoğlu 1995: 29–39.

that paper plans were used in the design process. Not only does it appear that plans for some Timurid-era buildings were drawn on paper but also that some buildings were designed on sheets of paper that had previously been marked with a square grid. The plans of the shrine of Aḥmad Yasawī at Turkestan City and of the Ghiyāthiyya Madrasa at Khargird in Iran, for example, are so regular that they must have been composed in this way. Such a hypothesis is confirmed by the statement that the renowned Timurid architect Qiwām al-Dīn Shīrāzi (fl. 1410–1438), who designed the Ghiyāthiyya Madrasa, was skilled not only in engineering-geometry (*muhandasī*) and building (*mi'mārī*) but also in drawing (*ṭarrāḥī*).[9] Later plans and representations, whether Ottoman plans or Moghul representations of a builder at work, suggest that gridded plans were widely used in the later Islamic period, although elevations rarely if ever formed part of the architect's kit.

Gridded paper seems to have been used to work out the *bannā'ī*—"builders' style" or "square kufic" tile designs—that became widely popular in this period. Paper drawings were also essential for the technique of decorating buildings with tile mosaic, in which an entire surface is covered with an unbroken revetment of ceramic pieces cut to form patterns.[10] Unlike earlier techniques, in which colored tile elements were embedded directly into the plaster or brick surface, complete tile mosaic is an indirect technique in which the design is first worked out on paper and then transferred to a large surface, usually the workshop floor. Only then does the tile-cutter cut the tiles into pieces using a paper or pasteboard template, bevel the tile edges so they fit closely together, and then match them *face down* on the pattern. Once fitted together, the tile pieces are covered with a thin layer of plaster; after that hardens, the resulting plaque is affixed to the wall.[11] Most tile mosaic designs popular in the fourteenth and fifteenth centuries are either vegetal arabesques or geometric patterns of stellate strapwork, neither of which were based on grids.

As one goes farther back into the past, evidence for the use of gridded plans and drawings becomes less clear. Although the Takht-i Sulaymān plaque indicates that sophisticated architectural information was coded and decoded in the Ilkhanid period, this drawing is

[9] Necipoğlu 1995: 5.
[10] Bloom 2006.
[11] Meinecke 1976, vol. 1: 165–166.

not inscribed on a grid, suggesting that the use of grids was a somewhat later invention. Similarly, the plans of Ilkhanid buildings rarely exhibit the relentless geometrical uniformity of those designed during the Timurid period, suggesting that architectural practice changed significantly at this time. The absence of grids is confirmed at Cordoba, at the exact opposite end of the Muslim lands, where the pulpit (*minbar*) from the Kutubiyya Mosque in Marrakesh, Morocco, was ordered in 1137. Although the strapwork design decorating its flanks appears to be based on a grid, it actually was generated by geometric construction, not by connecting the intersections of a grid and filling in the squares.[12] In earlier Islamic art and architecture, it would seem, grids were not used for generating designs.

Architectural Representations in the Islamic Lands

In addition, the very existence of architectural plans in early Islamic times remains a matter of lively speculation. No early plans survive, yet scattered references to drawings of buildings have led some scholars to believe that there was a continuous tradition of architectural representation from the earliest times, while other scholars—myself included—believe that the regular use of plans coincided with the transformation of Islamic culture in the period after the thirteenth century, as the potentials of graphic notation on paper began to be exploited for the first time.[13] There is no question that early builders worked out some particularly intricate structures, such as the Dome of the Rock in Jerusalem (begun in 692), with graphic aids to help them conceptualize in advance the complex relationships between the parts of the plan, but there is little if any evidence that builders regularly used grids and plans as a means of coding and decoding graphic information. Similarly, there exist various early Islamic representations of buildings, whether the fantastic palaces depicted in mosaic on the walls of the Umayyad mosque of Damascus, which date from the early eighth century, or the mosques represented on the opening pages of an undated parchment manuscript of the Koran

[12] Bloom et al. 1998: 7, 92–93.

[13] For the traditional view, see Necipoğlu 1995: 3–27, where most of the relevant texts are accumulated. For plans as a function of the increased use of paper, see Bloom 2001: 173–178, 192–196.

discovered several decades ago above the ceiling of the Great Mosque in Sanaa, Yemen.[14] In neither case, however, can we imagine that anyone was meant to transform the representation into an actual building.

Rather, architectural practice remained largely traditional, empirical, and experimental well into the fourteenth century. For example, building a typical hypostyle mosque, in which many columns or piers support a wooden or vaulted roof, did not require the use of a plan because each bay, or unit of support, could serve as a full-scale model for the successful construction of additional units. As in antiquity, builders normally worked directly on the projects they supervised, so there was no need for a designer to encode information in a plan that another artisan would be expected to decode onsite.

Gridded Maps in the Middle Ages and Antiquity

Could the use of gridded architectural plans have derived from gridded maps, which are known to have been used in antiquity? Historians of cartography, who have seen plans of buildings as smaller-scale precursors of local and regional maps, have long recognized the relationship between the representation of geographical space and of architectural space.[15] The first Islamic gridded map may have been the lost world-map of the Abbasid caliph al-Ma'mūn, prepared for him in the early ninth century by Suhrāb (or Ibn Serapion), in which the points were plotted by a pair of weighted strings strung across it at right angles.[16] The most famous example of parallel horizontal and vertical lines on an Islamic map is the world map of al-Idrīsī (ca. 1154). His map followed the traditions of the Balkhī school, but he is also known to have prepared about seventy individual maps of the parts of the known world, keyed to one another and to their position on a larger world map. This complete map has not survived, though Konrad Miller's reconstruction makes it appear that it was based on a coordinate system or graticule, which had, of

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[14] For the Damascus mosaics, see van Berchem 1969. For the Koran frontispiece, see von Bothmer 1987: 4–20.

[15] See, for example, the several contributions to Harley and Woodward 1994, and the index s.v. "Architects, plans by," "Building plans, Egyptian," "Building plans, Greek," "Building plans, Medieval."

[16] Kennedy 1987.

course, been known to the Greeks.[17] A newly discovered medieval Islamic map from a *Book of Curiosities* in Oxford has the usual arrangement of many Balkhī school maps; unusually, there is a graticule scale laid across the northern portion of the continent of Africa, but the cartographer had little idea of what it meant or how it was to be used.[18]

The supposed connection with the Greek graticule, however, is based on an error of interpretation. Ancient authors such as Vitruvius, Pliny the Elder, and Galen actually avoided illustrating their works and advised others against the practice because images would soon be corrupted in the hands of copyists.[19] Ancient scientific and technical literature was constrained by the fact that complex visual data could not be communicated via visual media; for the most part, such data had to be translated into verbal discourse, primarily that of the written word. In an ancient scriptorium, if a reader dictated a text to ten copyists, there resulted ten copies of the same text, albeit with potential variations in the styles of handwriting that would not, in principle, compromise the legibility of the alphabetic text. Images could not, of course, be dictated in the same fashion.

Geographers and cartographers of the ancient world found themselves in a particularly difficult position. Eventually, in the second century CE, the Greco-Roman geographer Claudius Ptolemy perfected a system of plotting geometric coordinates in which a pair of numbers (representing longitude and latitude) could describe every significant point on a map. Although Ptolemy seems to have drawn numerous charts of both the earth and the sky, he never intended these images to be copied; rather, the alphanumeric data in his commentaries contained all the necessary information to generate these images afresh without recourse to earlier drawings. Ptolemy's greatness lies, therefore, in his discovery of how to transform images into a sequence of letters and numerals that could be recorded and transmitted without distortion. In effect, he was the first to digitize images.[20] Thus, although al-Idrīsī's map was divided into compartments that appear to form a grid, this twelfth-century conception is entirely

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[17] Harley and Woodward 1992: 160–170.

[18] Johns and Savage-Smith 2003; see also Yossef Rapoport's chapter in this volume.

[19] Carpo 2001: 20–21.

[20] Carpo 2001: 21.

different from the Ptolemaic system, and al-Idrīsī's map can be said to have had nothing to do with its ancient precedents.

By the fourteenth century, however, new trends appeared in Islamic cartography. The Ilkhanid geographer Ḥamdullāh Mustawfī prepared two world maps for his geography *Nuzhat al-qulūb* (Diversion of the Hearts) before his death in 1339. He tried to adapt the traditional system of climate divisions to a gridded square outside the circle of the world, with the parallels and meridians at right angles to each other. Although no copies of Ḥamdullāh Mustawfī's maps survive from the author's lifetime, later copies of his maps show how awkward this adaptation was. In his map of the Iranian-Turkestan region, longitude and latitude lines form a graticule of one-degree squares in which only one location is given that has the coordinates belonging to that square.[21] The Timurid geographer Ḥāfiz-i Ābrū (d. 1430) tried to use graticules in his maps of the world, with equal awkwardness. Gerald Tibbetts notes that the graticule seems similar to the projection that Roger Bacon used in the thirteenth century but then dismisses the similarity, although he is unable to determine its origins and seems to suggest that graticules were sometimes drawn at a later date over earlier maps.[22] S. Maqbul Ahmad, who wrote the article on maps for the *Encyclopaedia of Islam*, suggests instead that Muslim cartographers originally borrowed the concept of using a grid from the Chinese, especially since Mongol hegemony at this time united much of the region between Iran and China in a single cultural sphere.[23]

Chinese Graticule Maps and Plans

Various different types of maps have been known in China from the earliest times, some with grids and many more without them. The first known Chinese map on a square grid is the *Yuji tu* (Map of the Tracks of Yu), carved in stone in 1136 and again in 1142. A note on the map says "[A side of] each square converts to 100 *li*,"[24] and

[21] Tibbetts 1992b: 150.
[22] Tibbetts 1992b: 151.
[23] Ahmad 1990: 1081.
[24] The metric equivalent of 1 *li* is usually 560 meters (the length of the *li* has varied with time).

the system bears a superficial resemblance to the graticule system of longitude and latitude that developed in Europe. Unlike Ptolemy's graticule, however, the Chinese system is not a system of fixed astronomical coordinates, and the square grid seems to have been superimposed arbitrarily on a given area of interest.[25] The grid served not to locate points but to calculate distances and areas.

The origins of the Chinese system are equally a matter of lively speculation. Pei Xiu (223–271), one of the earliest names associated with the literary history of Chinese cartography, has been credited with suggesting the use of a clearly measured surface—in other words, a grid—for mapping.[26] Other scholars have suggested that it derives from the Chinese system of land division with crisscrossing paths, or the "well-field" system in which a square plot is divided into nine smaller plots with a well in the center.[27] Scholars of Chinese cartography also see connections between geographical maps and architectural plans. For example, all illustrations of Chinese timber-frame building plans from the Song architectural manual *Yingzao fashi* (twelfth century) are drawn on grid surfaces. The gloss to the diagrams may be translated as "floor plan"; it may also be an abbreviation of "chessboard on the ground," because Chinese wooden buildings of this and earlier periods were planned on grid surfaces.[28]

Evidence for the grid conception of two-dimensional rendering of space at ground level is confirmed by building plans and maps, such as a map of the Tang (618–906) capital at Chang'an preserved on a stele dated 1080.[29] Desire to see surface space along orthogonal lines was so strong that city plans were fictionalized into rectangular grids. The most widespread implementation of a grid surface in Chinese culture, however, was as a background for writing, for the grid creates a standardized space in which to write characters. As early as the fourth century, the calligrapher Wang Xizhi (303–379) is known to have used a grid, and the grid became the primal flat surface for visualizing space.[30] Similar modules were also used for sculp-

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[25] Harley and Woodward 1992a: 124.
[26] Steinhardt 1997: 10–11.
[27] Harley and Woodward 1992a: 124.
[28] Steinhardt 1997: 15.
[29] Steinhardt 1997: 15.
[30] Steinhardt 1997: 15–19.

ture, bronze casting, and architecture. Unfortunately, the grid-based system of Chinese architectural plans, in which the intersections mark the location of supports, appears to be quite different from the Timurid plans, where the spaces between the lines of the grid represent solids and voids in the structure.

Conclusion

Where does this rapid trip across Eurasian visual history leave us vis-à-vis our initial question about the relationship between, and origins of, the gridded maps and plans that suddenly appear in the eastern Islamic lands in the fifteenth century? Because there is no evidence for the earlier use of gridded architectural plans in any other part of the Islamic lands, and the early Islamic maps with graticules, such as they are, are now revealed to be irrelevant to this subject, it seems likely that the appearance of gridded architectural plans in Timurid Iran and Central Asia was indeed a product of the increased contact during the Ilkhanid and Timurid periods with China along the Paper Road.[31]

Nevertheless, this wasn't simply a case of Chinese "influence"—or, more properly, of Ilkhanid or Timurid builders borrowing a Chinese invention—because the Chinese graticule maps and architectural plans were as different in concept from those used in the Islamic lands as were Greco-Roman graticules. The effective use of maps and architectural plans demands not only that some people be able to draw them but also that other people be able to decode them, and there is no indication that Chinese and Iranian cartographers and builders shared any vocabulary of spatial representation. Increased contacts with China may have presented Chinese gridded maps to Iranian eyes, but that did not guarantee that Iranian viewers were privy to how they were meant to be read. We have seen several times already that what appear to be similar grids actually represent very different systems of conceptualizing space. In short, a series of crisscrossed parallel lines might have very different functions and meanings in different cultural contexts.

[31] For the long-distance transfer of motifs through the use of ink and pricked drawings on paper from a somewhat earlier period at Dunhuang, see Fraser 2004. I thank D. Neil Schmid for bringing this author's work to my attention.

What, therefore, was the purpose of the few gridded plans that have survived from the Islamic lands? Were they, like architectural plans as they evolved in the West, encoded instructions to builders about how to erect buildings? This hardly seems likely because they do not appear to convey sufficient information. What other function, then, might they have served? Though these plans may not have been instructions to builders, they may have helped them calculate the necessary materials and labor required to construct a building, much as the Chinese gridded maps were meant to help calculate distances rather than locate points. This was, it should be remembered, the moment in Iranian and Central Asian Islamic architecture when the *gaz*, or cubit, became the single measurement that served as the generative unit of a building project. All important dimensions in plan and elevation were based on this entity and were commensurable with it.[32] In this context, a gridded plan based on the cubit would have been a useful aid to help builders calculate, for example, how many bricks would be needed to build a particular structure or how much tile would be needed to decorate its walls.[33]

The simultaneous appearance of gridded architectural plans and maps in Central Asia during this period reveals another aspect of how political and commercial ties linking China with Central Asia, Iran, and the West had effects on intellectual and visual culture. Although it would have been impossible for a Persian speaker to make any sense out of a document written in Chinese, it was perfectly possible for him to see a Chinese image and be inspired by it to produce something quite new and different, even if the original intended meaning was completely lost in translation.

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[32] Golombek and Wilber 1988: 139–140.

[33] For similar instances of estimation in Byzantine architecture, see Osterhout 1999: 58–85.

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CHAPTER FIVE

SQUARE HOROSCOPE DIAGRAMS IN MIDDLE EASTERN ASTROLOGY AND CHINESE COSMOLOGICAL DIAGRAMS: WERE THESE DESIGNS TRANSMITTED THROUGH THE SILK ROAD?

Johannes Thomann

Many horoscopes from antiquity were written down either as plain texts or as tables. The few diagrams found in them all share the same crude circular form. The more frequent medieval horoscope diagrams in Greek, Arabic, and Latin codices and documents show, in contrast, a quadratic frame divided into nine squares, with diagonal divisions of the four corner squares. Although unkown to antiquity, this layout was common in Chinese hemerology (the method for determining favorable and unfavorable days), where the twelve yellow and black spirits were arranged in an identical scheme. Presenting a precise example of the transmission of scientific knowledge from China to the Islamic World would be significant because the matter has too often been discussed in vague terms (such as those of lunar mansions and alchemy, for instance).

Horoscope Design in Antiquity

The oldest known individual horoscopes come from ancient Mesopotamia.[1] Written on clay tablets from the sixth to the first century BCE, Akkadian sources describe planet positions at the time of a person's birth, either as a single text or as a linear list of positions. Horoscopes found in other regions of the ancient world are similar.[2] In Egypt, several Demotic,[3] an old Coptic,[4] and many Greek horos-

[1] Rochberg 1998.
[2] For Qumran text horoscopes, see von Stuckrad 1996.
[3] Neugebauer 1943; Neugebauer and Parker 1968.
[4] Černý, Kahle and Parker 1957.

copes,[5] mostly on papyrus, have been discovered. Out of the more than one hundred Greek documents, only one papyrus from Oxyrhynchos (15–22 CE; fig. 5.1),[6] eight graffiti from Dura Europos (176 CE and 219 CE; figs. 5.2; 5.3; 5.4),[7] one graffito from Abydos (353 CE; fig. 5.5),[8] and an engraving on a wooden object from Palestine[9] display diagrams. Despite their distant provenances, they look the same: a circle divided into four sectors by two lines that indicate the horizon and meridian lines, or, as in the Abydos graffiti, twelve sectors by six lines that indicate the twelve stellar houses. The circle represents the zodiac; the names of the twelve zodiacal signs are written inside the circle, while the names of the four cardinal points remain outside the circle. Ancient art often represents the zodiac as a circle or a ring, often bearing the images of the zodiacal signs. This standard iconographical pattern needed no explicit inscriptions or symbols.[10] The circular shape in horoscope diagrams was therefore self-evident. The word ζωδιακός was originally an adjective, and the full expression often used is κύκλος ζωδιακός, or "zodiacal circle."[11]

Literary transmission has preserved many ancient Greek horoscopes.[12] The largest collection is Vettius Valens's *Anthologiai* (second century CE), with 123 examples.[13] According to David Pingree's critical edition, no horoscope diagrams were found in the extant codices (eleventh to seventeenth century), and only some numerical tables of theoretical content illustrated the text.[14] The *Apotelesmatika* of Hephaistion (ca. 415 CE) contained several horoscope examples in its main part,[15] but only one diagram appears, in a codex of the thirteenth century.[16] In the *epitomai* to the work (twelfth to fourteenth

[5] Neugebauer and van Hoesen 1959; Neugebauer and van Hoesen 1964; Baccani 1992; Jones 1999.
[6] Neugebauer and van Hoesen 1959: 18, no. 15/22.
[7] Neugebauer and van Hoesen 1959: 49, no. 176; 54, no. 219, I.
[8] Neugebauer and van Hoesen 1959: 69, no. 353; Rutherford 2000.
[9] Ovadiah and Mucznik 1996.
[10] Gury 1994; Gury 1997; Obrist 2004.
[11] Gundel 1992: 15.
[12] Neugebauer and van Hoesen 1959: 76–160.
[13] Neugebauer and van Hoesen 1959: 78–140; Vettius Valens 1986: 18–20.
[14] For example, Vettius Valens 1986: 308–315.
[15] Hephaestio 1973–74, vol. 1: 87.
[16] Paris, *BN ms. gr.* 2417: Hephaestio 1973–74, vol. 1: 163, ms. P; *CCAG* 1898–1958, vol. 8, 1: 9–20; cf. Pingree 2001: 21.

Fig. 5.1. Horoscope on a papyrus from Oxyrrhynchos, P.Oxy. 235 (15–22 CE). Neugebauer and van Hoesen 1959: 18, no. 15/22.

century), more diagrams can be found.[17] The diagrams are all in the same square shape, with two horizontal, two vertical, and four diagonal dividing lines. *Codex Marc. gr. 324* has an open form, with no outer square frame, but shows the same divisions. We must emphasize that these drawings belong to different examples in the text, whereas the other codices had no illustrations. These drawings are marginal, except for two codices. In *Vat. gr. 1056*, the illustration is integrated in the text, but the passage is a twelfth-century interpolation. The diagram illustrates a *thema* cast April 9, 1106. The second example from this passage is for June 1, 1007, but has no diagram. Likewise, the two examples from *Codex Marc. gr. 334* were later added to the original text. So far, we cannot prove that these horoscope diagrams are witnesses of corresponding originals from late antiquity. More likely, they were ad hoc additions by medieval scholars.

Rhetorios' and Palchos' writings are still waiting for critical editions. Since the *Catalogus Codicum Astrologorum Graecorum* neglects dia-

[17] Venice, *ms. Marc. gr. 334 f. 183r and v* (14th c.); Hephaestio 1973–74, vol. 2: IX–XI, ms. C; *CCAG* 1898–1958, vol. 2: 16–37. Rome, *ms. Vat. gr. 1056 f. 115 v* (14th c.); Hephaestio 1973–74, vol. 2: XXI, ms. V; *CCAG* 1898–1958, vol. 1,5,3: 7–64; cf. Pingree 1997: 68; Pingree 2001: 21. Venice, *ms. Marc. gr. 324 f. 68v* (late 14th c.): Hephaestio 1973–74, *Epitoma* IV 26, 13, vol. 2: 224 ms. M; *CCAG* 1898–1958, vol. 2: 4–16; cf. Pingree 1997: 74. Florence, *ms. Laur. 28, 13 f. 128v* (14th c.); Hephaestio 1973–74, *Epitoma* IV 26, 45, vol. 2: 229, ms. I; *CCAG* 1898–1958, vol. 1: 6–20; cf. Pingree 1997: 74.

a

b

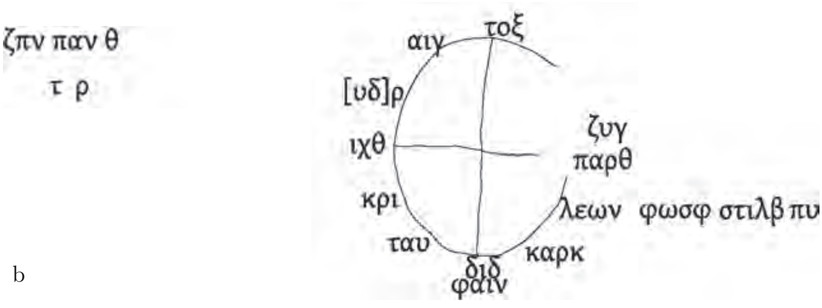

Fig. 5.2. Graffito with a Greek horoscope from Dura Europos (176 CE). Courtesy of Yale University Art Gallery, Dura Europos Collection photo b96.

grams, both in descriptions of the manuscripts and in text editions,[18] further study in the collections is needed. Another important text, ascribed to Eutokios,[19] is found in a Florence codex copied in about 1000 CE.[20] Only the beginning of the text has been published.[21] However, it contains the most famous Greek horoscope diagram, which has been reproduced many times and has therefore become emblematic of Greek astrology (fig. 5.6). The date of this horoscope is October 28, 497. The same horoscope occurs in a different version of the work erroneously ascribed to Paulos of Alexandria and Julianos of Laodikeia. This has been edited, but the edition gives no information on the illustrations of the two manuscripts.[22]

An astrological apology attributed to Stephanos the Philosopher, a pupil of Theophilos of Edessa, was made during the Macedonian Renaissance (late eighth or ninth century).[23] Hermann Usener, who edited it, paid attention to the diagrams. The work contains a horoscope of the Prophet Muḥammad's *hidjra* dated September 1, 621, when the first year of the *hidjra* began. Three Florentine codices (fourteenth to fifteenth century) and a codex in Munich (sixteenth century) display a similar design, while we see a different one with trapezoid divisions in the Vienna manuscript (fifteenth century).[24] This last example is instructive. Since all five codices include a diagram, we must believe that they refer to an earlier archetype. If this is true, we must admit that the particular shape could be changed at will, perhaps according to the practices common for horoscope drawing at the time and place where the manuscript was produced. There are similar cases in the Arabic[25] and Latin traditions.

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[18] In Byzantine codices, diagrams become more frequent, though they are consistently ignored in *CCAG* 1898–1958; cf. Neugebauer and van Hoesen 1959: 163. Occasionally textual variants found in the diagrams are included in the critical apparatus, but indications on the form and positioning of the illustrations are not given.

[19] Neugebauer and van Hoesen 1959: 188–189.

[20] Florence, *Codex Laur. Plut.* 28, 34; Neugebauer and van Hoesen 1959: 152–157, no. L 497, fig. 20; cf. Pingree 1997: 74; Pingree 2001: 20.

[21] *CCAG* 1898–1958, vol. 1: 170–171; Neugebauer and van Hoesen 1959: 231, pl. 32 with a facsimile of f. 142 r.

[22] *CCAG* 1898–1958, vol. 4: 99–110. Vienna, *Cod. philos. gr.* 179; *CCAG* 1898–1958, vol. 6, 3: 32. Modena, *B. Est. Cod.* 85; *CCAG* 1898–1958, vol. 4, 11: 32.

[23] Neugebauer and van Hoesen 1959: 158–160, L 621.

[24] Florence, *Mss. Laur. 28, 13; 28, 14; 28, 16*; Munich, *ms. n. 105*; Vienna, *ms. philol. gr. 108*; cf. Pingree 1997: 14; Usener 1914: 321–322; facsimile: Cramer 1954: 164–167, fig. 15.

[25] Abū Maʿšhar 2000, vol. 1: 125; 567.

a

Fig. 5.3. Graffito with three versions of a Greek horoscope from Dura Europos (219 CE). Courtesy of Yale University Art Gallery, Dura Europos Collection, photo c12.

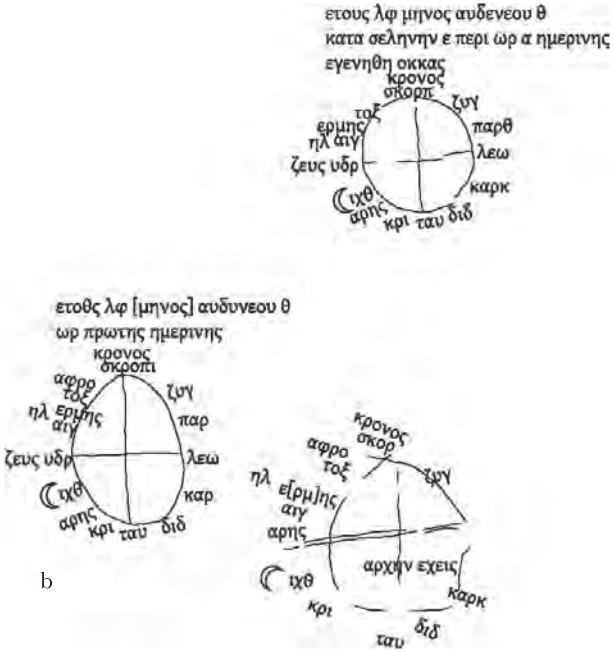


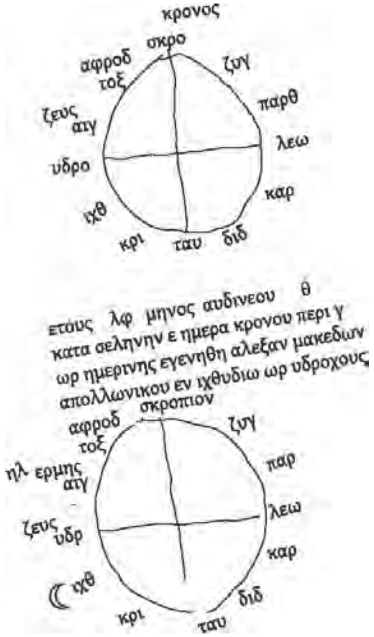
Fig. 5.3b.

In the documentary and literary Greek tradition, we are faced with a problematic gap because no horoscope diagram has been recovered from the middle of the fourth to the end of the tenth century. The astrological texts do not tell what the diagrams looked like. One poetic description of an astrologer's session with a customer is described in the *Dionysiaka* of Nonnos (fifth century).[26] The astrologer Astraios first covered a table with dark dust. He then used a compass to draw a circle in which he inscribed a square and a figure with three equal sides and angles. The rather fantastic setting of the scene makes it difficult to judge how precise the poet's concepts were. Did he have a horoscope in mind or, rather, a magical image that included representations of the planets? The least we can say is that the basic figure was a circle. If we take Nonnos's words seriously—that horoscopes were drawn in sand or dust—the lack of preservation of such drawings cannot surprise us. Other literary references confirm that horoscopes were drawn in circular form. In the *Dura Euro-*

[26] Nonnos 1940, vol. 1: 215–217.

a

Fig. 5.4. Graffito with two versions of a Greek horoscope from Dura Europos (219 CE). Courtesy of Yale University Art Gallery, Dura Europos Collection, photo d214.



b

Fig. 5.4b.

Fig. 5.5. Greek horoscope on a graffito from Abydos (353 CE). Neugebauer and van Hoesen 1959: 69, no. 353.

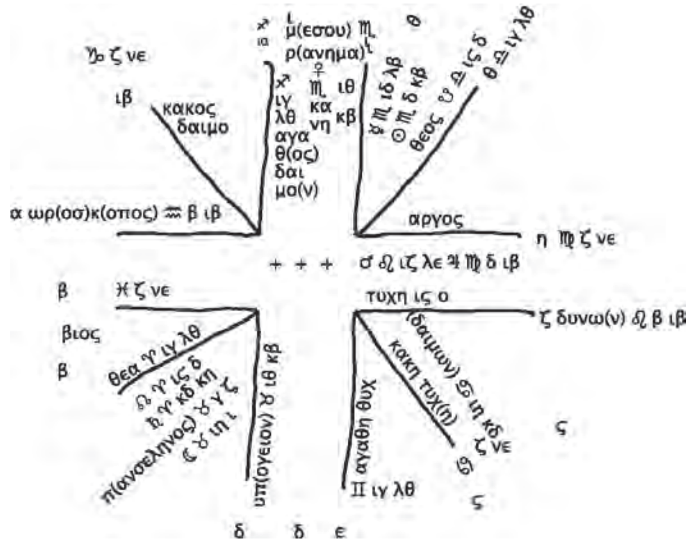


Fig. 5.6. Greek horoscope diagram with date October 28, 497, in Eutokios (about 1000 CE). Florence, Cod. Laur. Plut. 28, 34.

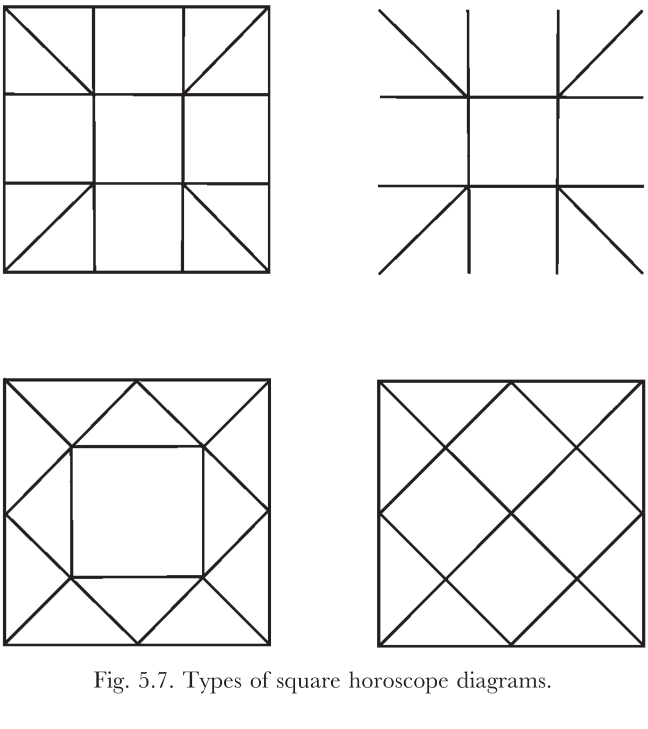


Fig. 5.7. Types of square horoscope diagrams.

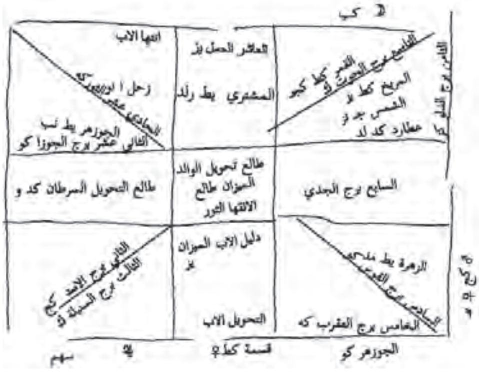


Fig. 5.8. Arabic horoscope from the Cairo Geniza (1146 CE). London, British Library, Ms. or. 5565 fol. 47v–48r.

pos graffiti we find ἐποίησαν σφῆρον.[27] As far as we know, the circle form was the only form used in antiquity for horoscopes. The provenance of the quadratic form, which we find in the late Byzantine codices, is, to date, a mystery.

The only *Latin* horoscopes that have come to us from classical antiquity are those of Ceionius Rufus Albinus preserved in the *Mathesis* of Firmicus Maternus,[28] but none of the eleventh- to fifteenth-century codices in the critical edition by W. Kroll and F. Skutsch has a diagram. The *early medieval* tradition relied, in depicting the zodiac, on images similar to the classical models. Heaven formed a series of concentric circles that represented the planetary spheres. Horoscopes have not been preserved before the twelfth century, when astrology reappeared in the West under Arabic influence.[29] In short, the circular diagram with radial divisions was the only form used for horoscopes drawn in the classical world, and the square diagrams of medieval codices reflect the practice of their time.

Square Diagrams in Arabic Astrology

After the expansion of the Arabic dominions in the seventh century and the formation of the Islamic Empire, Arabic became the lan-

[27] Neugebauer and van Hoesen 1959: 54, no. 219, I, l.1.
[28] Firmicus Maternus 1968, vol. 1: 81.
[29] North 1986: 96–107.

guage of science both in the southern and eastern Mediterranean world, in Mesopotamia, Iran, and Central Asia. Scholars from these regions met in Baghdad, the center of this cultural area. From there they spread to other parts of the empire, like the astronomer al-Farghānī, who came from Turkestan to Baghdad and was sent later to Cairo. Unfortunately, the documentary evidence that could give us insights into scientific activities from the eighth to the tenth century does not come from the center but from the margins only: papyri from Upper and Middle Egypt, and paper documents from Central Asia. Among the tens of thousands of papyrus documents from the seventh to the tenth century, no astronomical or astrological texts have yet been located, although two tenth-century paper folios with astrological texts have been described by Joseph von Karabacek.[30]

More astronomical and astrological documents were found among the Cairo Geniza documents. David Pingree and Bernard Goldstein published a number of Arabic and Hebrew horoscopes from the eleventh and twelfth century,[31] and there are other unpublished examples.[32] More than half of them contain diagrams of a square form with rectangular, diagonal, or rhomboid divisions (figs. 5.7; 5.8). The editors remark that these documents illustrate the general usage in Cairo and not merely the Jewish community's practices. This has been confirmed by a unpublished fragment, found recently in the Vienna papyrus collection (see color fig. 5.9),[33] that depicts the lower left part of a horoscope diagram in the standard square form, with the diagonal division of fields in the corners.

Unfortunately, the original manuscripts of the astrological texts from the eighth and ninth centuries are lost. The earliest Arabic codices containing astrological works are from the tenth century.[34] One of them, the Istanbul codex of Abū Ma'shar's *al-Mudkhal al-kabīr*, has been published in facsimile.[35] The manuscript has no illus-

[30] Karabacek 1894: 256–257, nos. 1051–1052.
[31] Goldstein and Pingree 1977; Goldstein and Pingree 1978; Goldstein and Pingree 1981.
[32] Personal communication, Geoffrey Khan (Cambridge).
[33] Vienna, Österreichische Nationalbibliothek, Papyrussammlung, *Papyrus A.Ch. 189* (unpublished).
[34] Sezgin 1979: 131, 144, 157.
[35] Istanbul, *ms. Carullah 1508;* Abū Ma'shar 1985.

tration at all, and since there are no horoscope examples in the text, we cannot expect to find diagrams in the other early codex of the *Mudkhal*.[36] Abū Ma'shar's *Kitāb al-qirānāt*[37] (dated 352 H/963 CE) and Ibn ad-Dāyā's commentary on Ptolemy's *Karpos*[38] (dated 371 H/981 CE) have not yet been edited.

We find diagrams in the majority of the literary horoscopes present in published texts. Sixteen diagrams of the standard square type with diagonal divisions of the four corner fields are depicted in the astrological history of Māshā'allāh, the Ibn Hibinta version available in two facsimile editions of the Munich manuscript, from the thirteenth century (fig. 5.10).[39] In the *Kitāb al-Kāmil* by Mūsā Ibn Nawbakht (twelfth century), 48 horoscopes are represented in three different types of square diagrams:[40] most show rhomboid divisions, five have the standard division, and two horoscopes combine both divisions. The *Kitāb 'arḍ miftāḥ an-nudjūm* from the time of Abū Ma'shar (preserved in a fifteenth-century manuscript in Milan) includes eleven square diagrams with rhomboid divisions, except one marginal drawing in the standard form.[41] For the convenience of the modern reader, the editor has added the circular versions of the horoscopes. Different types of square diagrams coexisted again in Abū Ma'shar's astrological history (see the two manuscripts as described in the edition by Keiji Yamamoto and Charles Burnett).[42]

The manuscript evidence is consistent with other Arabic documents. Horoscopes were illustrated with square diagrams that had slightly different types of divisions—namely, the standard type of diagonal divisions of the four corner fields, the rhomboid division, and occasionally a combined type. This practice is currently not recorded before the eleventh century. A passage in Abū Ma'shar's *Taḥāwīl al-mawālīd* on how to draw an anniversary horoscope is therefore quite valuable.

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36 Paris, *BN ms. ar. 5920*; Sezgin 1979: 131 (Sezgin corrects its date to the twelfth century); Abū Ma'shar 1985: iv.

37 Istanbul, *ms. Carullah 1599*.

38 Teheran, *ms. Malik 5924*.

39 *Munich, ms.arab. 852*; Māshā'allāh 1971: 1–38; Ibn Hibinta 1987.

40 Paris, *BN ms. ar. 2591*; Ibn Nawbajt 1982.

41 *Cod. Ambros. 1071*; Bausani 1983.

42 Abū Ma'shar 2000.

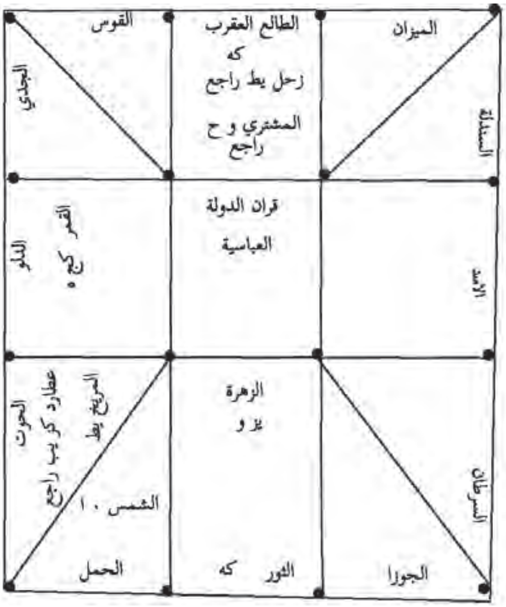

Fig. 5.10. Arabic horoscope from Ibn Hibinta's Mughnī. Munich, Bayerische Staatsbibliothek, Ms. ar. 852 fol. 216v.

> *Wa-idhā aradta an taʿmala ṣūrata taḥwīli l-sanati bi-mā fīhā ʿalā l-tamāmi fa-djʿal ṣūratan mudawwaratan aw murabbaʿatan wa-qsamhā tnā ʿašara qisman ʿalā naḥwi l-ʿamali lladhī huwa mustafīḍun fī aydī l-nāsi.*[43]

> If you wish to make a complete picture of the revolution of the year, produce a circular or a square picture and divide it into twelve parts, as the use is spread among people.

In the Byzantine translation:

> Εἰ βούλει ποιῆσαι τὴν σχηματογραφίαν τῆς ἐναλλαγῆς τοῦ ἔτους ..., ποιήσον σχῆμα κυκλικὸν ἢ τετραγωνικόν, καὶ μέρισον τοῦτο εἰς ιβ' τμήματα καθὼς οἱ καθ' ἡμᾶς ἄρτι ποιοῦσι τὰ θήματα.[44]

This quotation indicates that in Abū Maʿshar's time, two forms of diagrams were employed. This is the earliest reference to a horoscope diagram in quadrilateral shape, the standard form in medieval astrol-

[43] Text according to *Paris, ms. BN, ar. 2588*, fol. 35r and *Escurial ms. 917*, fol. 5v.
[44] Abū Maʿshar 1968: 13.

ogy. The same text also refers to an alternative circular form, and we can assume that the classical form was still used for horoscopes. Later, the circular design is found in theoretical diagrams of the zodiac, and occasionally in lavish horoscopes that were actually paintings of the heavens and not simple diagram sketches.[45] Abū Ma'shar refers to both as common and not new ways to draw a horoscope. We must ask ourselves when and where astrologers began to use the square form.

Astrological Diagrams in Central Asia

Protected by the dry climate of Central Asia, many treasures, predominantly from the eighth to the tenth century, have been discovered during the last hundred years: Khwarezmian documents near the Aral Sea; Sogdian documents on Mount Mugh in Tajikistan; Uyghur, Tibetan, and Sanskrit documents in Turfan; Chinese documents at Dunhuang, and so forth. For a number of reasons, these documents are quite difficult to use and a constant challenge for science historians. Khwarezmian and Sogdian documents are scattered in different parts of the former Soviet Union. Russian, Uzbek, and Tajik publications are rarely available in European libraries. The Turfan documents in Berlin have only recently been digitized, and the International Dunhuang Project in London is still processing its collections. Scholarly editions are limited to a small fraction of these materials. Research on Chinese documents is primarily conducted in Chinese and Japanese. An important step forward was made in 2003, when a survey of the divinatory texts from Dunhuang was published.[46]

Texts in ten major areas of divinatory sciences are described in the collective work that Marc Kalinowski has edited. In our context, the chapter on hemerology (including astrology) is of primary interest.[47] Hemerology, the method for determining favorable and unfavorable days, has a long history in ancient China.[48] Tradition in this field was kept alive, and its concepts were included in the huge ency-

[45] Keshavarz 1984.
[46] Kalinowski 2003b.
[47] Kalinowski 2003a.
[48] Important recent publications on hemerology are Major 1993, Loewe 1994, Sun and Kistemaker 1997, Keightley 2000, and Dorofeeva-Lichtmann 2001.

clopedias of the Ming dynasty.[49] Two almost-intact copies of hemerological works were found in a tomb of the third century BCE.[50]

In Kalinowski's survey, about 72 documents in Chinese deal with hemerology.[51] They were written in the eighth, ninth, and tenth century.[52] Many are similar in style to more classical texts.[53] Some betray the influence of Western astrology from Transoxania.[54] Dated January 25, 975,[55] the earliest horoscope was based on writings by Li Miqian, an astrologer who had left Samarqand to go to Dunhuang.[56] The diagram mentioned in the text is absent from the copy we have, which does not seem to be the original report prepared for the customer.

Fortunately, many other astrological documents contain diagrams that inform us on the drawing style of the course of the planets. In *P2964ro,* the sun god is represented on its way to the traditional five regions of heaven.[57] We see a square divided into nine rectangular sections, out of which five are used to depict the sun.[58] More astonishing is a diagram of twelve spirits in their annual course (fig. 5.11).[59] Here, in a Chinese document, we encounter the standard diagram used for horoscopes in the West. As in Western horoscopes, the date of validity of the diagram is written in the central fields.[60] The twelve peripheral fields represent a cycle along which the powers are disposed. The basic shape, a three-by-three square field, is well known from many divinatory documents at Dunhuang. The design refers to faces in physiognomy[61] and to areas in topomancy.[62] Classical

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49 Ho 2003: 113–138.
50 Kanilowski 1986.
51 Kalinowski 2003a: 213.
52 Kalinowski 2003b: 20–21.
53 See the survey in Kalinowski 2003a: 217–218.
54 Kalinowski 2003a: 238–240.
55 *P4071*; Kalinowski 2003a 271–272.
56 Kalinowski 2003a: 240.
57 *P2964ro*; Kalinowski 2003a: 256–257; 297, pl. 20 and front cover.
58 For an explanation based on the *Huainanzi* (second century BCE), see Major 1993: 35–38.
59 *P2964ro* Kalinowski, 2003a: 298, pl. 22; see Kalinowski, 2003a: 243, 256–257.
60 The two fourth and tenth months: *si yue* and *shi yue*.
61 *P3390*: Hou 1979: pl. XIX.
62 For example, *P2615*, 3b, Kalinowski 2003b: 607, pl. 54.

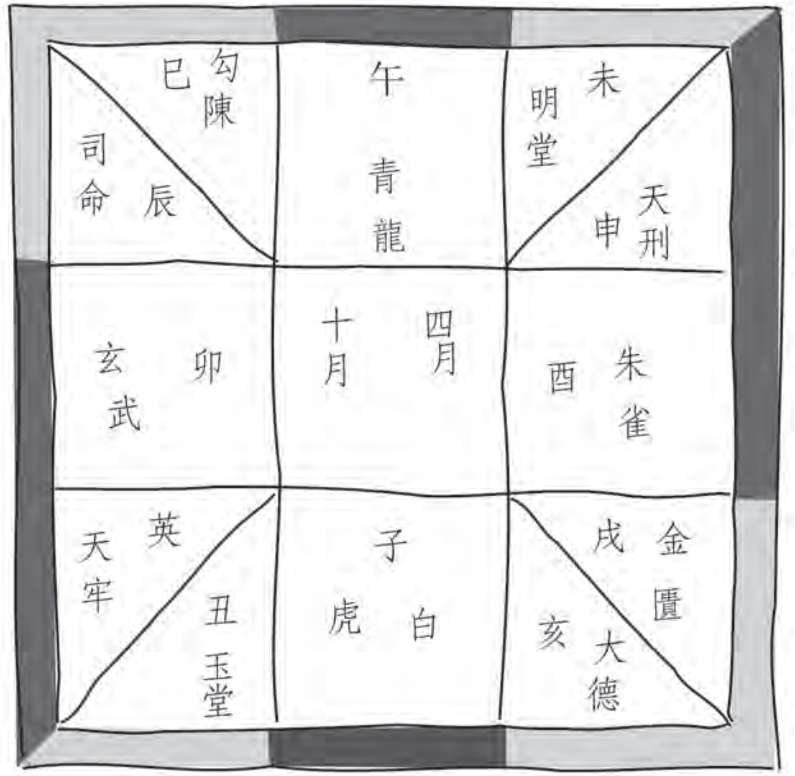

Fig. 5.11. Diagram of twelve spirits from Dunhuang. Paris, Bibliothèque Nationale, Pelliot 2964r.

Chinese texts often mention this kind of diagram.[63] The diagonal division of the four corner squares is attested as well.[64]

As we can see, Central Asian astrology differs from astrological practices in the Mediterranean and Middle Eastern regions. The concept of twelve chronological elements that matched a diagram with nine squares was taken from China. We cannot be surprised to see that it was applied to astrology and—presumably—to horoscopy. At the same time, we must emphasize that radial circular diagrams were used, too, even on one and the same page.[65] We must also stress

[63] Major 1993: 32–43.
[64] Dorofeeva-Lichtmann 2001: 40, fig. 2.3; 48, fig. 2.6.
[65] *P3594ro*; Kalinowski 2003a: 298, pl. 21.

that Chinese astrological and divinatory manuscripts rely more frequently on drawings and paintings than do those from the Western ancient world. Eastern science was often iconophile, whereas Western science was more iconophobic. This tendency is visible in the Uyghur divinatory documents from Turfan.[66] In linguistic and textual terms, they are close to the Sanskrit tradition, yet their illustrations clearly mirror Chinese influence.

Conclusion

Evaluating the details of the communication flow through Central Asia lies beyond the scope of this chapter, but there is no doubt that elements of many cultural traditions were combined and recombined in the process. Scholars, religious figures, and technicians traveled over long distances, as we see in the case of al-Farghānī, who was born in the Farghāna valley, a place much closer to Turfan and Dunhuang than to Baghdad and Cairo, where he later worked. Nor was this an isolated case, since in early Islam, scholars from Central Asia predominated among astronomers and astrologers. Abū Ma'shar came from Balkh in Afghanistan, al-Khwārazmī and al-Bīrūnī from the Aral region.[67] In contrast, scholars from the urban centers of the ancient Greek tradition played no key role in reviving the sciences from the eighth to the tenth century.

The strange design pattern of square horoscopes that suddenly emerged in Western astrology during this period most probably came from East Asia. Doubtless due to cultural exchange on the Silk Road, we encounter both in China and in the Middle East the same three-by-three square diagram with diagonal divided corner fields applied to the disposition of heavenly forces in a cyclical system of twelve regions. This further stresses the significance of the long-distance interaction between East and West.

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[66] Rachman 1937.
[67] Rosenfeld 2003: 21, 44, 144.

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CHAPTER SIX

THE INTRUSION OF EAST ASIAN IMAGERY IN THIRTEENTH-CENTURY ARMENIA: POLITICAL AND CULTURAL EXCHANGE ALONG THE SILK ROAD

Dickran Kouymjian

The *pax mongolica* of the thirteenth century instituted after the conquests of Genghis Khan reopened the Silk Road and provided a locus for the exchange—or, better, the importation into the imagination of medieval Armenia—of a number of notions and artistic expressions from China.[1] This chapter is devoted to a close analysis of this cultural contact with East Asia by examining in depth a number of oriental motifs only casually described in earlier literature. At a conference in 1977, I gave a paper entitled "Far Eastern Influences in Armenian Miniature Painting in the Mongol Period."[2] It focused on a pair of Armenian miniatures with Chinese-type decorative elements (see color figs. 6.1, 6.2). The principal conclusions were two: (1) Chinese motifs were integrated into Armenian art by the 1280s in an aesthetically satisfying way, and (2) Armenian artists incorporated both motifs and stylistic aspects of Chinese and Chinese-inspired Mongol art prior to the neighboring Muslim tradition and independent of it. As an addendum, I suggested that East Asian works of art may have been partly responsible for a pronounced stylistic change in Cilician painting of the late thirteenth century.[3]

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[1] A part of the research and the illustrative material was realized thanks to successive grants from the Bertha and John Garabedian Charitable Foundation of Fresno, California.

[2] This paper was part of a panel on "Patronage and Symbolism in Medieval Armenian Art," sponsored by the Society for Armenian Studies during the Eleventh Annual Meeting of the Middle East Studies Association in New York. It was distributed in mimeographed form. Certain points provoked a lively debate.

[3] In the mimeographed version of 1977, 7–9; in the published, Kouymjian 1986: 461–468.

An expanded study of 1986[4] incorporated new material: late-thirteenth-century Islamic miniatures[5] and another Armenian illumination (color fig. 6.3). Among the themes treated in the article were the use of Chinese elements in Islamic art of the Ilkhanid and Timurid periods; the Armenian-Mongol alliance; visits of Armenian aristocracy to the Mongol and Ilkhanid courts and the exchange of gifts; Cilician ports as the major trading centers for East–West commerce; Chinese objects that might have served as the models for the motifs; the date of the Mongol summer palace of Takht-i Sulaymān, in Iran, and its tiles;[6] the stylistic consequences of Chinese art on Armenian painting, especially landscapes;[7] and the effects of all of this on post–1300 manuscript illustration.

In June 2003, I gave a paper entitled "Chinese Motifs in Thirteenth-Century Armenian Art: The Mongol Connection" at an international symposium at the Los Angeles County Museum of Art in conjunction with the exhibition *The Legacy of Genghis Khan: Courtly Art and Culture in Western Asia, 1256–1353*.[8] In it, new material was presented, including minor motifs in two additional Armenian manuscripts; Chinese and Central Asian silks, which had been more

[4] Kouymjian 1986.

[5] The 1977 version referred to the *Manāfiʿ al-hayawān* executed in Marāgha in the 1290s (Pierpont Morgan Library, Ms. no. 500, fol. 55) as showing the first trace of Chinese influence in Islamic painting. Miniatures from the manuscript have been widely reproduced; see, for example, Pope 1945, esp. pl. 114; Gray 1961: 22, 24; and Komaroff and Carboni 2002: 142, fig. 169. However, Marianne Shreve Simpson, in a private communication, pointed out earlier traces in a manuscript dated 1290 of the *History of the World Conqueror* of ʿAṭā Malik al-Juwaynī, now in the Bibliothèque nationale de France, Supplément persan no. 205, fols. 1–2. This two-page frontispiece is seemingly the earliest example of Islamic painting with Chinese influences (cloud bands, garments, horse trappings). The manuscript was executed in Ilkhanid court circles in 689 H / 1290 CE; ʿAṭā Malik al-Juwaynī was an important court official. Juwayní 1912–37, part I, already reproduces the frontispiece between pages xx–xxi; cf. Ettinghausen 1959: 44–65, figs. 1–2; Komaroff and Carboni 2002: 173, fig. 201. The original version of this paper (1977) had a rather long discussion of the evolution of Chinese elements in Islamic manuscript illumination from the very late thirteenth to the sixteenth century.

[6] Takht-i Sulaymān was not discussed at all in the 1977 paper, but covered in detail in Kouymjian 1986: 444–456.

[7] This latter section was expanded Kouymjian 1986: 461–468, and several illustrations were added.

[8] The exhibit was organized by Linda Komaroff of the Los Angeles County Museum of Art and Stefano Carboni of the Metropolitan Museum of Art in New York, where it originated. Since published, Kouymjian 2006: pl. 23–25; fig. 58–67.

aggressively studied since my earlier research in the 1970s and 1980s; a reexamination of Islamic art in the Ilkhanid period; and the possible meaning of East Asian motifs in art commissioned by Armenian royalty in the late thirteenth century.

In the thirteenth century, Armenians were living under two quite separate regimes. In the historic homelands to the northeast (known as "Armenia" from the first millennium), the area just south of the Caucasus between the Black Sea and Lake Urmia, independence had been lost and Armenians found themselves ruled by successive Selčuq, Mongol, and Turkmen dynasties. To the southwest in Cilicia, on the Mediterranean coast, a new Armenian political entity was established in the late eleventh century, to become an ally of the Crusaders and a fully recognized kingdom in 1198. Cilician Armenia was among the first Christian states to establish diplomatic relations with the Great Mongols in their capital Khara Khorum (Karakorum or Qara Qorum). By the mid-thirteenth century, what might be called an Armenian-Mongol treaty was concluded, though the contracting parties were hardly equal in terms of their relative power or influence; this agreement should probably be seen as a benign Mongol dominion over the Armenian state.

During the following half-century, a limited number of East Asian motifs penetrated Armenian miniature painting. Some came directly from the Mongol court in Khara Khorum, the capital city founded in the Orkhon valley in 1220, and others by way of the Mongols of Iran, the Ilkhans, after they took firm possession of the Near East from roughly 1260 on.[9] Two instances of this visual exchange are considered below, one quite palpable, with clear visual representations, the other conjectural.

Direct Borrowing of Chinese Artistic Motifs

By the 1280s, artists working under the patronage of the Cilician Armenian aristocracy used very clear Chinese motifs: Chinese dragons, phoenixes, and lions are the most obvious ones, clearly recognizable and quite distinct from such animals as they are known in European or Near Eastern art. In the second half of the thirteenth century, the Armenian kingdom of Cilicia had friendly relations with

[9] For a more detailed discussion, see Kouymjian 1986 and Kouymjian 2006.

the Mongols, concluding an alliance several times renewed.[10] From the successive journeys of Smbat, the Constable of Armenia, in 1247–1250,[11] and then of his brother King Het'um in 1253–1255,[12] to the death of Ilkhan Ghāzān in 1304, Armenian princes and kings traveled to the Great Mongol court at Khara Khorum or to the various residences of the Ilkhans of Iran,[13] especially under Hülegü (1256–1265), his son Abakha (1265–1282) and grandson Arghūn (1284–1291).

The Chinese motifs are confined entirely to a series of animal representations in Cilician Armenian illuminated manuscripts, the most important of which is a luxurious Lectionary, now in Erevan, commissioned in 1286 by Prince Het'um, the son of King Levon II who became king three years later.[14] His father, and especially his mother Keran, had been famous as patrons of the arts since the 1260s, as is clear from donor portraits in two Gospels, both now in Jerusalem, one of 1262[15] and the other of 1272, in which Prince Het'um is held by his father (color fig. 6.4).[16] The Lectionary was executed in court circles in Cilicia, where, thanks to the wealth acquired from East–West trade along the Silk Road, Armenian aristocracy and the upper clergy, often also from the royal family, encouraged the arts through their patronage.

The Chinese elements are contained almost entirely on two highly decorated chapter headings in a manuscript with hundreds of illuminations: decorated headpieces, full page and marginal miniatures. The first of these (see color fig. 6.1) shows two pairs of lions, upright and crouching, around the bust of Christ Emmanuel, above which

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[10] On Armenian-Mongol relations, see Galstyan 1964: 91–105, no. 1 (in Armenian); Der Nersessian 1962; Boase 1978: 25–29; Mutafian 1988, vol. 1: 423–429; and Mutafian 1993: 54–61.

[11] On Smbat's journey, see Richard 1986.

[12] On the famous journey of Smbat's brother King Het'um, see Kirakos Ganjakec'i 1961: 364–372, and the translation of this section with commentary, Boyle 1964: 175–189.

[13] The most convenient treatment of the Ilkhanids is still found in Boyle 1968.

[14] Erevan, Matenadaran, Repository of Ancient Manuscripts (henceforth abbreviated as "M"), M979, fols. 293 and 334, as is visible on the folios, though they are listed as fols. 295 and 335 in Der Nersessian 1993: figs. 516–517 (in color); the volumes were published posthumously.

[15] Jerusalem, Armenian Patriarchate, J2660, Gospels, 1262, fol. 228. Portrait of Prince Levon and his wife Keran; Der Nersessian 1993: fig. 64.

[16] Jerusalem, Armenian Patriarchate, J2563, Keran Gospels, Sis, 1272, fol. 380. Portrait of Queen Keran and King Levon II with their children (our color fig. 6.4).

are a number of birds, two in flight, and the Buddhist Wheel of the Law.[17] The rest of the profuse decoration is devoid of East Asian elements. The lions protect Christ in their Buddhist role as guardians of sacred images. The second folio (see color fig. 6.2) appears much later in the lectionary.[18] In the spandrels on each side of a trilobed arch, Chinese dragons and phoenixes face each other. In ancient China these motifs represented the emperor and the empress.[19] The Mongol rulers of China, the emperors of the Yuan dynasty (1279–1368), continued the tradition. The emperor himself sat on a dragon throne and wore robes with dragons, as seen in a detail of a large Yuan mandala in the Metropolitan Museum in New York showing two donor emperors.[20] As a complement, the phoenix represented the empress. Phoenixes and empresses entertained a close relationship in Taoism. In the paradise of Mount Kunlun, Chinese artists often depicted the Queen Mother of the West (Xiwangmu) flying on the back of a phoenix. The Sovereign of the Clouds of Dawn (Bixia yuanjun) wore a headdress that contained seven phoenixes.[21] The crown of the Yuan empress bore the fabled bird, the *fenghuang*, which

[17] Erevan, M979, fol. 293, lection for 6 April, the Annunciation to the Virgin; Kouymjian 1986: 421–425, figs. 2a–2e (details); color reproduction in Der Nersessian 1993: fig. 516; color reproduction, Kouymjian 2006: pl. 23. Earlier literature and reproductions: Sakisian 1940: fig. 38; Dournovo 1952: 126–127, an album in Russian and Armenian with color plates; Dournovo 1961, a reduced album with color plates in English and French versions; Dournovo and Drampyan 1967–69: pl. 43; Azaryan 1964: fig. 134; Der Nersessian 1969: fig. 22, reprinted in Der Nersessian 1973: fig. 261; Beckwith 1970: 139, pl. 259; Der Nersessian 1978: 155, fig. 116.

[18] Erevan, M979, fol. 334, readings for the feast of the Transfiguration (Vardavar in Armenian); Kouymjian 1986: 437–433, figs. 3a–3d (with details); color illustrations in Dournovo 1952: pl. 35; Korkhmazian et al. 1984: fig. 119; Der Nersessian 1993: fig. 517; see also Azaryan 1964: fig. 134; Kouymjian 2006: pl. 24; see also Azaryan 1964: fig. 134.

[19] See the general discussion of the importance and meaning of these symbols for the Chinese in Tomoko 2002: 96–97: "The dragon and phoenix are considered good omens and are two of the oldest and most popular mythical animals in Chinese culture. More importantly, both were symbols of sovereignty in China"; Kouymjian 1986: 431.

[20] Metropolitan Museum of Art (MMA), purchase, Lila Acheson Wallace Gift (1992.54), silk *kesi*, 245.5 x 209 cm.: Komaroff and Carboni 2002: 108–109, no. 185, figs. 125–126; Watt and Wardwell 1997: 95–99, no. 25.

[21] I would like to thank Philippe Forêt for this information.

is not really a phoenix but has been assimilated to the animal of Greek mythology since early times.[22]

In the top center of the Armenian headpiece (see color fig. 6.2), flanked by a pair of Wheels of the Law, is a single, almost heraldic Chinese phoenix. Its coloring is the same as the others in this piece. It is positioned nearly identically to phoenixes described as "soaring" on Jin-dynasty (1115–1234) silks, as in one from the Cleveland Museum (color fig. 6.5).[23] The entire form is rendered extremely gracefully with well-understood proportions. In China the phoenix (like the dragon) was one of the four animals representing the cardinal directions. It ruled over the southern parts of heaven and, therefore represented warmth, summer, the sun, and was said to appear to glorify a successful ruler and a peaceful reign.[24]

A single Chinese dragon (see color fig. 6.3) is also found in a portrait of Archbishop John, Het'um II's great uncle and the brother of the first King Het'um, in a Gospel commissioned by the clergyman in 1289.[25] But here we have a faithful representation of a piece of golden Chinese silk, which serves as his tunic or is sewn onto it. Its coiled position is strikingly close to surviving dragons on Chinese silks of the Jin and Yuan dynasties (color fig. 6.6).[26]

The integration of Chinese elements also took place in Islamic art in the Ilkhanid period, but somewhat later, though certainly in a

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[22] The dragon and phoenix motifs were already used in the Han dynasty and reached their highest point of popularity in Chinese art under the Song (960–1279).

[23] Cleveland Museum of Art, John L. Severance Fund (1994.292), tabby, brocade, gold thread on a blue green ground with rows of phoenixes facing right and left, Watt and Wardwell 1997: 118–119, no. 31; Komaroff and Carboni 2002: 197: no. 180, fig. 207. Cleveland Museum of Art, Gift of the Art Textile Alliance (1994.27), tabby, brocade, Watt and Wardwell 1997: 120–121, no. 32.

[24] *Editors' Note*: *Feng* means "male phoenix," while *huang* means "female phoenix." *Fenghuang* is the phoenix that manifests him/herself when a *shengren*, a Taoist immortal, comes to this world. A *fenghuang* is therefore a good omen and symbolizes harmony.

[25] Erevan, M197, fol. 141v, not executed at the monastery of Akner as believed by some authorities; see Der Nersessian, 1993: 96–97; Kouymjian 1986: 418–419, figs. 1a–1b (detail of dragon); color reproductions in Mutafian 1993: 55; Der Nersessian 1993: fig. 645.

[26] New York, MMA, 1989–205, 74.5 x 33.2 cm; first published in Watt and Wardwell 1997: 116–117, no. 30; Komaroff and Carboni 2002: 174, cat. no. 181, fig. 202; Cleveland Museum of Art (Edward I. Whittemore Fund, 1995–73), 20 cm, square, with alternating rows of roundels with phoenixes (only partially visible on the fragment) and dragons; Watt and Wardwell 1997: 153, no. 42; Komaroff and Carboni 2002: 176, cat no. 183, fig. 206.

more enduring and pervasive way. Contemporary to the Armenian miniatures are the tiles uncovered during the excavations at the summer palace of the Ilkhans, Takht-i Sulaymān, not far from Sultaniyya, probably built and decorated in the 1270s under the orders of Abakha Khān.[27] Tiles in various shapes and sizes contain Chinese dragons and phoenixes, but the most impressive are the large luster ones (color fig. 6.7a). The animals, as in the Armenian examples, are borrowed directly from Chinese art. Only later in the fourteenth century and afterward were these motifs Iranized in works such as the Great Mongol *Shāhnāma* of the 1330s.[28] The influence of Chinese landscape painting was to be a permanent factor in Islamic art, especially in the subsequent Timurid and Safavid dynasty, when Chinese animals and landscape elements, such as cloud treatment, become common elements in painting and ceramics. However, in the Takht-i Sulaymān examples, the dragon and phoenix never appear together on the same tile as in the Armenian headpiece, though on the walls of the great reception hall they were juxtaposed.

In Chinese art, the motif of the confrontation between the dragon and phoenix, associated with emperor and empress, became popular in the Ming dynasty (1368–1641) and afterward on all sorts of luxury items. It appears to be unknown in Chinese or Mongol art prior to the late fourteenth century. Thus the confronted dragons and phoenixes painted in the Armenian lectionary a full century earlier are enigmatic. It is hard to imagine that a highly skilled Armenian artist—working in the royal workshop and thus theoretically in contact with members of the ruling family who had been to the court of the great khans in Central Asia—could have invented representation of these fabulous animals together, and apparently in conflict, before the Chinese themselves brought them together. In any case, special-

[27] The closest in my feeling are on the large luster titles, both dragons and phoenixes, but never together on the same tile, and for the phoenix the eight-pointed star tiles in lajvardina; Komaroff and Carboni 2002: no. 99, fig. 97 dragon from the MMA, no. 100, fig. 100, phoenix from the Victoria and Albert Museum, no. 84, fig. 101, star tiles from Arthur M. Sackler Gallery, Washington DC, or the phoenix on a hexagonal tile from Berlin, Komaroff and Carboni 2002: no. 103, figs. 92, 95. Cf. for these same or similar phoenix and dragon tiles from Takht-i Sulaymān, Kouymjian 1986: fig. 10–14.

[28] Formerly known as the Demotte *Shāhnāma*, now dispersed in various collections. Most of the important miniatures were brought together in the Metropolitan Museum of Art and the Los Angeles County Museum of Art exhibit of 2002–2003, see Komaroff and Carboni 2002: passim.

ists in the field have pointed out that they know of no occurrence of the theme in Yuan art or earlier.[29] I was forced to conclude that the confronted dragons and phoenixes painted in the Armenian lectionary are puzzling.

On February 2, 2005, Lukas Nickel sent me an email from London announcing the discovery of what I now call the missing link. A bronze mirror found in a late Liao-dynasty (907–1125) tomb clearly shows the motif. Nickel reports, "Tomb M10, belonging to Zhang Kuangzheng, died 1058 and buried in 1093 (strange difference, but noted as such). . . . The tomb is among a group of tombs of the same time, in Xuanhua, Hebei province."[30] The accompanying illustration (a line drawing, fig. 6.7b) that Nickel sent shows a dragon with three claws and a phoenix with five long trailers facing each other at some distance and hovering around a round object, no doubt meant to be a pearl. In the field are cloud bands. The mirror phoenix (fig. 6.7b) resembles the one above the trilobed arch of the Armenian headpiece (see color fig. 6.2) much more than it resembles those confronting the dragons (also in color fig. 6.2), where they are much reduced in form to accommodate the very limited space in the spandrels. Nickel cautions, however, that "the Liao were by no means Chinese, so if they started this tradition, I would not expect it to be Chinese, but influenced by [a] Central Asian, steppe or more western tradition."

Perhaps more important for the tenor of this study and those preceding it is an assumption I made that the phoenix and dragon, inspired by Chinese artistic representations, were shown in conflict in the Armenian miniature (see color fig. 6.2). Yolanda Crowe (email of August 2, 2004) was the first to caution me that though the dragon may look fierce to Western eyes, in China he was regarded as an auspicious symbol: "The problem arises when we think that we are looking at two beasts in combat. That is our non-Chinese reaction.

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[29] Linda Komaroff, curator of Islamic Art at the Los Angeles County Museum of Art and an authority on art in the Mongol courts of Iran and China, did not know of any example of the dragon-phoenix motif in the Yuan period. Yolanda Crowe, an independent scholar on Islamic and Chinese art in Geneva and London, confirmed the lack of examples with the animals together in struggle. Lukas Nickel (formerly research assistant at the chair of East Asian Art History at the University of Zurich, now at the School of Oriental and African Studies in London) knew of no examples of the dragon-phoenix motif in Chinese art before the Ming dynasty.

[30] *Excavation Report Xuanhua* 2001, vol. 1: 49.

Fig. 6.7b. Bronze mirror with dragon and phoenix. Xuanhua, Hebei, China, tomb M10, pre-1093. *Excavation Report Xuanhua* 2001, vol. 1: 49.

In fact dragon and phoenix are not in combat in a Chinese context." Linda Komaroff (email of February 18, 2005) affirmed the notion and suggested that the dragon and phoenix "should be viewed as complementary opposites like *yin* and *yang*." Lukas Nickel commented (email of March 9, 2005), "Judging from my experience I would be most surprised if the meaning were conflict. The Chinese quest for harmony in everything connected to tombs would suggest that the balance between both powers should matter, not conflict."

There is still the question of how these Chinese creatures were brought together in a headpiece of the Armenian lectionary of 1286. Was it due simply to the fertile imagination of an artist, who saw them represented separately in imported silks or even together in

separate bands, like a number of well-known Yuan silks? Personally, I think not. The artist, I believe, knew that the phoenix represented the empress and the dragon the emperor—in his context, the queen and king of Armenia. If my suggestion presented elsewhere[31] has merit—namely, that the lion–Christ Emmanuel headpiece (see color fig. 6.1) represented King Levon, Het'um's father, and the phoenix-dragon one dominated by an heraldic phoenix (color fig. 6.2) stood for his consort Queen Keran, Het'um's mother—then the combining of the two creatures was not accidental but a conscious depiction of harmony in the Cilician royal household.

Taken together, the small menagerie of Chinese animals in three Armenian miniature paintings (see color figs. 6.1, 6.2, and 6.3) demonstrates how elegantly Armenian artists were able to integrate artistic motifs of high symbolic importance from a land at the other end of the Silk Road. Despite the problem of a concrete antecedent for the dragon-phoenix motif, the models for these paintings came either through the exchange of gifts,[32] mentioned regularly in the sources, between Armenian royalty and Mongol and Ilkhan rulers, or through the extensive trade with China and Central Asia conducted through Cilician ports primarily by Italians.[33] I have argued elsewhere that the impact of Chinese art on Armenia during the Mongol period extended beyond the faithful reproduction of distinctive animal motifs to a new treatment of space in painting.[34] In a series of manuscripts dating to the 1270s and 1280s, including miniatures in the Lectionary of Het'um II and the Gospels of Bishop John, the traditional single plain flatness common to Armenian and east Christian art, including Byzantine painting, was replaced by a genuine interest in revealing perspective and space through techniques learned from Chinese landscape painting, including jagged mountains and gnarled trees that push against borders, varied and receding ground lines indicated by clumps of vegetation, and motion down steep inclines.

This assimilation of Chinese motifs was seamless in the Armenian examples, but unlike the parallel and enduring influence in Islamic

[31] Kouymjian 2006: 321.

[32] On the exchange of gifts and visits between the Armenian royalty and Mongol rulers, see Kouymjian 1986: 453–456.

[33] For a discussion of commerce between the kingdom of Cilician Armenia and East Asia, see Kouymjian 1986: 449–453.

[34] Kouymjian 1986: 461–468 and figs. 19–22.

art, it was very short-lived. After 1300 these strange animals, and the experiments with space, disappear completely from Armenian painting, which slowly declines from the heights of the late thirteenth century due to the gradual weakening of the Armenia kingdom and the end of the Mongol-Armenian alliance after the Ilkhans definitively converted to Islam in the time of Ilkhan Ghāzān Khan (1295–1304). Without Mongol support Armenians could not survive the Mamluk onslaught from Egypt, which put an end to the Cilician kingdom in 1375.

Illustration of the Alexander Romance

More problematic is the influence of East Asia on the legendary *Alexander Romance*. Though the Armenian translation of the Pseudo-Callisthenes was made in the late fifth century, it was only at the end of the thirteenth and the first years of the fourteenth century that there was a major revival of interest in it.[35] The oldest illustrated Armenian *Alexander*, a magnificent manuscript now in the Mekhitarist Monastery in Venice,[36] suggests, I think, that the new interest in Alexander as a world conqueror is directly related to the Mongol conquests of the thirteenth century. Armenia and its northern neighbor Georgia were directly affected by the earliest Western invasions of Genghis Khan. As mentioned above, within a generation of the great khan's death, the kingdom of Armenia had concluded an alliance with the Mongols, and King Het'um made the first visit of any Christian monarch to the Mongol court. By the third quarter of the thirteenth century, half a dozen Armenian historical sources—the most important of which are Vardan, Kirakos, Grigor of Akner, and Smbat Sparapet[37]—speak at length about the Mongols. It is precisely in this context, around the year 1300, that this first and most lavishly illustrated Armenian manuscript of the *Alexander Romance* was executed. The most densely illustrated Byzantine *Alexander* also now

[35] For an English translation of the Armenian version of the *Alexander Romance* with a discussion of the text, see Wolohojian 1969. On the art and iconography of the illustrations of the Armenian version, see most recently Kouymjian 1999 and Kouymjian, forthcoming.

[36] See now the facsimile edition and commentary, Traina 2003.

[37] Details on texts and translations of these historians can be found in Thomson 1995.

in Venice, was copied and painted slightly later in the mid-fourteenth century, from an earlier but lost Byzantine model of the late thirteenth century.[38] And the great revival of interest in the Persian epic *Shāhnāma*, which includes the exploits of Alexander, occurred under the Ilkhans in 1330s and after. I do not believe the revival of interest in Alexander as displayed by manuscripts from the Armenian, Persian-Islamic, and Byzantine traditions in the same late-thirteenth/early-fourteenth century is a coincidence.

There is no one-to-one correspondence between any of these manuscripts or artistic traditions. The turbans evident throughout the Armenian and Byzantine illuminations point to an Eastern influence, in some respects perfectly natural since much of the *Alexander Romance* is devoted to his conquest of Iran and the areas beyond. Yet the very choice of Alexander as the archetype conqueror suggests an historical moment when a parallel world conquest was the reality. There are also broad themes in these three manuscript traditions that suggest interrelationships. I choose as examples three scenes with a strikingly similar feeling in each of these manuscript traditions:

> (1) Burial scenes in which the coffin of the king or hero is carried high overhead, a representation that is foreign to standard Christian iconography: the burial of Persian King Darius with Alexander helping bear the coffin from the Armenian Alexander Romance in Venice of ca. 1300 (color fig. 6.8); the bier of Rustam and Zavāra from the Great Mongol Shāhnāma of ca. 1330 (color fig. 6.9); the funeral of King Philip of Macedonia from the Byzantine Alexander Romance in the Hellenic Institute in Venice of the mid-fourteenth century (color fig. 6.10).
>
> (2) The engagement of the cavalry of opposing armies is rendered with a similar rhythm of armed soldiers and horses in all three manuscripts.[39]
>
> (3) The pose of the seated or enthroned rulers, principally Alexander, has a common look or feeling. The ruler is usually shown frontally seated on a throne with feet and knees spread apart in the Armenian

[38] Xyngopoulos 1966. More recently, a facsimile edition has been published in Greek by Trahoulias 1997, with a translation of the captions into English and modern Greek.

[39] Armenian example, the V424, fols. 89v–90; Great Mongol *Shāhnāma*, Iskandar Killing the Fur of Hind, the Keir Collection, Komaroff and Carboni 2002: fig. 36; Hellenic Institute, Venice, *Alexander Romance,* for example fol. 177, see Xyngopoulos 1966: pl. 112.

> (color fig. 6.11) and Ilkhanid (color fig. 6.12) examples, and more rigidly seated, with knees together, in the Byzantine manuscript.[40] The seated position of the emperor, common in early Byzantine art, gives way, more often than not, to formal portraits of the standing monarch in both Byzantine and Armenian art of the thirteenth and fourteenth centuries.[41] Stylistic effects are also shared by these traditions: namely, the omnipresence of turbaned figures in all three codices and horses and banquet scenes, which share a likeness.

This interaction has yet to be thoroughly studied to see whether what appears to be similar cannot be explained in other ways. Whether these likenesses are due primarily to the Silk Road is not clear. However, in the Mongol period they seem directly related to the great conquest, which brought the East Asian world of China to the Islamic and Christian Near East. One *can* imagine that without the Mongol conquest Chinese artistic elements might have still made their way into Armenia and the Islamic heartlands through commerce and travel. But without the Mongol control of the entire Silk Road, it is much harder to imagine that symbols like the dragon and phoenix could have taken on the meaning of ruling power and authority in their borrowed environments, as in the Armenian examples.

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[40] In the Hellenic Institute Byzantine manuscript, though the seated ruler (scores of examples) looks stiffer than in the Armenian or Persian examples, the throne, the crown, the attendants, and surroundings have an affinity with the contemporary Armenian and Ilkhanid examples. In all three manuscripts under consideration, Alexander and other rulers are also shown standing, sometimes in formal situations.

[41] Contemporary examples include, for the Armenian, the figures of Prince Levon and his wife Keran as cited in note 15 above and as in our color fig. 6.4, of 1262 and 1272, respectively; for the Byzantine, the Chrysobull of Alexis III Komnenos, 1374, Mount Athos, Monastery of Dionysion, Evans 2004: 260, fig. 9.2.

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PART III

WITHIN THE ISLAMIC WORLD

CHAPTER SEVEN

COMPARING AL-KĀSHGHARĪ'S MAP TO HIS TEXT: ON THE VISUAL LANGUAGE, PURPOSE, AND TRANSMISSION OF ARABIC-ISLAMIC MAPS

Andreas Kaplony

One of the most famous Islamic maps of the Silk Road (color fig. 7.1, color fig. 7.2)—and its oldest non-Chinese representation[1]—is part of a comparative dictionary of Turkish written in Baghdad between 1072 and 1077 by al-Kāshgharī, a scholar from Barsghān in Central Asia. The only manuscript of the dictionary was copied in Damascus in 1266 by an otherwise unknown Muḥammad ibn Abī Bakr.[2] Although ethnographic and linguistic research has carefully analyzed the more than six hundred pages of the manuscript, next to no attention has been paid to the geograpical data it contains. This is the more lamentable because the manuscript has been copied directly from the author's autograph—a unique opportunity to compare how a single copying changed text and map in diverging directions.

Comparing al-Kāshgharī's map with those by Arabic geographers[3] will assist us in understanding his visual language. Although he was no geographer, he relied on a geographical language to express his own concepts but adapted it to his own needs—as can be seen, for instance, in the eastward rather than southward orienta-

[1] For an introduction to the much older Chinese maps of the Silk Road, see Herrmann 1922.

[2] The manuscript of the "Compendium of the Languages of the Turks" (*Dīwān lughāt al-Turk*) by Maḥmūd ibn al-Ḥusayn ibn Muḥammad, called al-Kāshgharī, is kept in Istanbul, in the Millet Genel Kütüphanesi (Ms. Ali Emiri, Arabi, no. 4189). It has been carefully translated by Dankoff and Kelly 1982–85 and published in an excellent facsimile by the Kültür Bakanlığı in Ankara in 1990 (Kāshgharī 1990). For a detailed analysis of the manuscript and its history, see Dankoff and Kelly 1982–85, vol. 1: 1–69. Parentheses in the main text refer to the facsimile edition. Square brackets signal my additions and completions.

[3] For a general introduction into Arabic-Islamic geography, see Miquel 1967–88; Sezgin 2000–07.

tion of his map.[4] Turning to al-Kāshgharī's introduction and his dictionary will show us why he thought that adding a map would help the reader learn Turkish. Comparing the geographical names on the map with those found in the introduction and the dictionary proper will allow us to reconstruct the original map. An analysis of the copyist's table, especially, will reveal how the map was adapted to new circumstances.

Description

The map indicates the four cardinal points, with north on the left side, countries like the Land of the Russians (*Rūs*) in the north, Japan[5] (*Djābarqā*) in the east, Sri Lanka in the south, and the "Land of the North Africans, i.e., Spain" (*Arḍ al-Maghāriba wa-hiya Andalus*) in the west, as well as mountains, deserts, rivers, and seas. In the margins, legends explains the color code: Green—which now has become black—denotes seas, like the Ocean around the world, the Sea of Japan in the east, the Bay of Bengal in the south, and the Aral Sea in the north. Red stands for mountains, such as the mountain network at the center and the mountains around the "Land of Gog and Magog." Grey—now also almost black—refers to rivers: the Syr Darya and Amu Darya rivers at the center, the Indus (erroneously called *Sayḥūn*, "Amu Darya") in the south, and the Volga in the north. Sand deserts such as the Qara Qum are in yellow.

The map presents two remarkable features. First, the focus is on the yellow dots, each one explained by a title, yet these dots are not referred to by the legends in the map margins. The green seas, red mountains, grey rivers, and yellow deserts seem to constitute the background on which these dots have assumed their relative locations. A second remarkable feature is found in the lower part of the map. There, a table displays in a roughly geographical disposition the major countries of the Islamic world, from eastern Iran to Spain. In this table, red lines are not mountain ranges but delineate geographical entities. Yellow dots are few there. The visual language of this table obviously differs from the one in the main part of the map.

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[4] Miller 1926–31, vol. 5: 143.

[5] Herrmann 1935: 23; Sezgin 2000–07, vol. 1: 348. Daunicht 1985: 144, 166 localizes *Djāburqā*, *Djābulqā* in southern Korea.

We might assume that the copyist, Muḥammad ibn Abī Bakr, added the table to adjust the map to the political conditions of his time.

Visual Language

Arabic maps are a constant challenge to today's readers.[6] They are dangerously similar to our maps: their dots symbolize cities while their lines represent roads and rivers, their colored areas stand for deserts, lakes, and seas, and they come with titles and captions. Yet if we applied the standards of modern cartography to Arabic-Islamic maps, we would find them deficient because their distances and projections are only approximate. Imperfect measurement tools and methods seem to explain why. The absence of scales in Arabic-Islamic maps[7] wrongly suggests that cartographers were not even interested in precise calculations.[8]

But the geographers themselves emphasize that they indeed drew precision maps and knew exactly how to measure both distances and angles. For instance, al-Khwārazmī's (d. 847) *Book on the Image of the Earth* (*Kitāb ṣūrat al-arḍ*) consists of long lists of the more than two thousand symbols of a precision map (now lost) probably ordered by the caliph al-Ma'mūn (813–833). In its chapter on the mountains south of the equatorial line, the symbol table lists, in each row, a running figure, the name of each sign, its longitude and latitude (in degrees and minutes), color and orientation.[9] Suhrāb's *Book on the Wonders of the Seven Regions* (*Kitāb 'adjā'ib al-aqālīm al-sab'a*, tenth century) likewise mentions the characteristics of more than fifteen hundred signs of a map now lost. The twelfth-century geographer al-Idrīsī

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[6] Savage-Smith 2003.

[7] Miller 1926–31, vol. 1: 15. From the side bar on al-'Umarī's autograph world map (ca. 1340) (ms. Istanbul, Topkapı, Ahmet III 2797/1; reproduced Sezgin 2000–07, vol. 3: pl. 1a), Sezgin 2000–07, vol. 1: 122–124 concludes that al-Ma'mūn's world map had a scale. But the side column actually shows only the seven Ptolemaic *klimata* with extensions north and south. The mapmaker gives the data needed to locate each place: the numbered stripe (on the Equator line) and the map grid. The reader can locate places according to latitude (given by its *klima*) and longitude (given in figures). No evidence supports the thesis that the side bar was for measurements. For the wider context of this kind of scale, see Chapter 4 by Jonathan Bloom in this volume. For a rare case of a scale, see Yossef Rappoport's Chapter 8, also in this volume.

[8] Pinto 1994: 110.

[9] al-Khwārazmī 1926: 38, no. 540–559 (reproduced in Tibbetts 1992a: 97, fig. 4.3).

tells us how precision maps were made. In his *Pleasure Trip of Those Who Desire to Travel through Distant Lands* (*Kitāb nuzhat al-mushtāq fi khtirāq al-āfāq*, completed in 1154), he reports that King Roger of Sicily (1111–1154) demanded that all the geographical information available be first gathered on a drawing board. After several years of work, the king ordered workmen to copy the drawing board onto a big silver plate. Al-Idrīsī describes being personally asked to complete the information put on the silver map by a book that had written text, a world map, and many regional maps.[10] At least twice in his treatise of geographic tables, al-Khwārazmī states that he did not include a name for a locality because it was not given "on the map" (*fī l-ṣūra*).[11] To know more about these precision maps, we need to turn to other calculation instruments, such as the metal astrolabes and celestial globes of Arabic-Islamic astronomy. The astrolabes give the terrestrial coordinates on an outer circle and mark the exact position of some few stars by pointers on a rotating net.[12]

Thus Arabic-Islamic geographers used three tools to record geographical data: distance and angle measurements were supposed to be engraved on large metal *precision maps*, though to date none of these precision maps has been found, and there were manuscripts with *explanatory texts* and small *diagrammatic maps*.[13]

The precision instruments of astronomy (astrolabes and celestial globes) and geography (the large metal precision maps) were intended for measuring purposes. But what were the objectives and the visual language of the diagrammatic maps? Patching together an interpretation based on intuition may be tempting but dangerous. Yet we can decode the visual language of the diagrammatic maps because they are referred to in the books they are part of.[14] The geographers stress that their works[15] include texts and maps, like those of their

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[10] al-Idrīsī 1970–84, vol. 1: 6f. For the making of al-Idrīsī's book, see Lewicki 1966.

[11] See al-Khwārazmī, *Das Kitāb ṣūrat al-ard*, 139, line 4, reading "a city that has no name on the map" and 77, line 9, "other (rivers ?) which are not named on the map."

[12] On Arabic-Islamic astrolabes, see Paul Kunitzsch's Chapter 9 in this volume.

[13] Savage-Smith 2003: 113, 120–122.

[14] Miller 1926–31, vol. 1: 15.

[15] al-Muqaddasī 1877: 9,6–10.

predecessors,[16] and they constantly describe their maps and refer to them.[17]

The two main categories mentioned are color and shape. Each author has his own restricted range of colors that are given specific meanings. In the introduction on terminology of his *Best Dimensions for the Knowledge of the Regions* (*Aḥsan al-taqāsīm fī maʿrifat al-aqālīm*, written about 985), al-Muqaddasī announces that he uses red for roads, yellow for deserts, green for seas, blue for rivers, and grey for mountains.[18] This convention corresponds to al-Kāshgharī's legends, where red is for mountains, yellow for deserts, green for seas, and grey for rivers. Al-Muqaddasī and al-Kāshgharī thus select and define different colors. The maps kept in our libraries, each with an individual color code, confirm their methodological choices. Color is also an important category in precision maps. Al-Masʿūdī describes the colors of the precision map ordered by al-Ma'mūn in both his longer *Meadows of Gold and Mines of Jewels* (*Murūdj al-dhahab wa-maʿādin al-djawhar*, finished in 943) and his shorter *Book of Indication and Revision* (*Kitāb al-tanbīh wa-l-ishrāf*, finished in 956).[19] Thirty-three different colors are listed in al-Khwārazmī's *Book on the Image of the Earth*, the backup of a lost precision map.[20]

Shape is the other category geographers deal with. Both al-Muqaddasī and al-Masʿūdī cite shape almost exclusively when they describe seas as triangular or round, or as similar to a scarf, a trumpet, intestines, or birds.[21] The standard maps of Suhrāb visualize the terms used for the curvature of coastal lines.[22] The maps conserved often just combine geometrical forms like triangles and circles. This confirms that geographers used a limited palette of shapes.[23]

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[16] al-Muqaddasī 1877: 9,6–10; 10,5–14; 19–11,13; 68,20–22 (ms. C).

[17] al-Masʿūdī 1965–79, vol. 1: 102,7–10; 128,3.

[18] al-Muqaddasī 1877: 9,6–10.

[19] al-Masʿūdī 1966–79, vol. 1: 183–185; vol. 2: 308; al-Masʿūdī 1894: 33.

[20] Tibbetts 1992a: 97; 100.

[21] al-Muqaddasī 1877: 10,5–14; 19–11,13; 117,12–14; al-Masʿūdī 1965–79, vol. 1 102,7–10; 128,3; 142,7f.; 143,12f.

[22] Suhrāb ms. Strasbourg BNU 4247 f. 40f. (reproduced Sezgin 2000–07, vol. 3: pl. 1.i).

[23] Miller 1926–31, vol. 1: 15; vol. 5: 184; Bagrow and Skelton 1964: 55; Sezgin 2000–07, vol. 1: 130. Al-Muqaddasī ms. Leiden (e.g., the map of Kirmān, reproduced Tibbetts 1992b: 122, fig. 5.4) brings in size as an additional category to represent, with bigger or smaller dots, cities of different importance. This may have been

On al-Kāshgharī's map, the Ocean forms a perfect circle, whereas the Aral Sea is a drop and the Bay of Bengal, a triangle.

Reducing the number of possible shapes made mapmaking easier to teach and learn,[24] while it increased the convenience and safety of copying. Copyists interpreted freely each geographer's palette of shapes. They made no mistake as long as they kept copying circles as circles, triangles as triangles, and so forth. They most probably considered as identical maps that look different to us because we overestimate style individuality. Thanks to the reduced number of shapes, reproducing images became similar to reproducing texts. In both cases copying meant transmitting the idea of the original, not its concrete form.

Diagrammatic maps are topological representations that indicate relative locations,[25] whereas precision maps provide exact positions. Precision maps are different because they are not only concerned with relative positions but display computed positions. Al-Khwārazmī's tables define cities with points (longitudes and latitudes, given in degrees and minutes), rivers and roads with lines of points, mountains with lines between two points, and seas with coastal lines.[26]

Geographers refer to a sign by its name and suppose their readers will know which sign they mean. Only exceptionally does an author refer to a sign in a different manner. But how should we interpret the fact that on the surviving maps, some signs are not explained—for example, that on al-Kāshgharī's map, some yellow dots occur with no title? Unidentified signs are meaningless for cartographers, so we can only assume that those signs originally had titles that were lost by the copyists.

caused by the elaborated terminology present in the text introduction (al-Muqaddasī 1877: 6,9–8,9).

[24] Miller 1926–31, vol. 1: 15f.; Savage-Smith 2003: 113, 120–122. See also Jonathan Bloom's chapter in this book.

[25] Ahmad 1965: 596b; Tibbetts 1992a: 120; Savage-Smith 2003: 112f.

[26] For example, al-Khwārazmī 1926: 74,4–80,6, no. 1120–1230 (in part translated Sezgin 2000–07, vol. 1: 101); al-Khwārazmī 1926: 82,1–83,15, no. 1260–1282 (translated von Mžik 1929: 189f., transferred on the map von Mžik 1929: 178f.).

Purpose

Let us find out what al-Kāshgharī's concerns are. After he enumerates all the Turkish tribes, he states: "And I showed each of them on the following round-map (*dā'ira*)" (21,4f.). Later, after he lists all Turkish languages and describes the extension of the Land of the Turks, he declares: "I showed all that on the round-map (*dā'ira*), which is the image (*shakl*) of the earth, so that it may be known" (25,15). Likewise, the anonymous author of the *Regions of the World from East to West*, when describing the Arabian Peninsula, writes: "We explained that on the image (*ṣūra*) to make it clearer."[27] He notes about Byzantium: "We showed and explained these countries, the great villages and all the cities existing there on the image (*ṣūrat*)."[28] Geographers considered their maps an integral part of their books since they used maps to explain what otherwise would have remained unclear.

To understand al-Kāshgharī's map, we must turn to the book from which the map comes, the *Compendium of the Languages of the Turks* (*Dīwān lughāt al-Turk*).[29] To prove that Turkish and Arabic were two equally strong horses competing in a race, al-Kāshgharī wrote this Arabic introduction to Turkish languages, as a scholar who applied the methods of Arab linguists to the different Turkish languages (5,1f.; 595,14f.). He emphasizes that non-Muslims should learn Turkish because the Turkish elite was gaining more and more influence in the Islamic world (2,6–3,3). This may allude to the Selčuq domination of the Abbasid caliph al-Muqtadī (1075–1094),[30] to whom the book is dedicated (3,10–17).

In this dictionary of more than six hundred pages, al-Kāshgharī chooses to present the Turkish languages by analyzing words. He illustrates each word with a sentence, idiomatic expression, proverb, or piece of poetry (4,1; 5,16–6,3) that provides precious insights into Turkish life during the eleventh century. His arrangement follows the one of the Arabic lexicographer al-Fārābī (d. 961), in that it lists words primarily according to morpheme types and secondarily according to the alphabet: the first chapter enumerates words that

[27] *Ḥudūd* 1962: 165,9.
[28] *Ḥudūd* 1962: 185,9f.
[29] Herrmann 1935: 21.
[30] Dankoff and Kelly 1982–85, vol. 1: 4.

have only sound consonants (first the nouns, then the verbs); the second chapter, words with two identical consonants; the third chapter, words beginning with the letters *wāw* and *yā'*; and so on (3,17–6,5).[31] Each linguistic feature is carefully analyzed, and the results are formulated as rules. Because Turkish languages express number, person, aspect, time, and so forth with suffixes, Turkish words can be quite long, and this often turns the dictionary into an introduction to Turkish syntax.

The prominent features on al-Kāshgharī's map—the yellow dots—may represent where these Turkish tribes lived,[32] with the region of the Qarakhānid dynasty at its center.[33] The background information on seas, mountains, rivers, and deserts helps situate the tribes and establish their respective relations. Although al-Kāshgharī focuses on the interactions of the Turkish tribes and not on Islamic cities, his methodology is identical to the one Arabic-Islamic geographers had developed. At the center of al-Kāshgharī's map, the yellow dots mostly refer to Turkish tribes, but in the margins they refer to countries. (Similarly, on Arabic-Islamic maps dots mostly refer to cities, while near the map frame they refer to peoples and countries.) The claim that these yellow dots represent roads[34] cannot be supported because al-Kāshgharī next to never mentions roads in his text.

Al-Kāshgharī's ultimative objective is to describe the language of all Turkish tribes—that is, to englobe *all* Turkish languages (2,3–9; 638,5–9). He presents himself as a well-educated Turkish nobleman who has visited the tribes of Yaghma, Tukhsi, Čigil, Oghuz, and Uyghur, as well as the most remote places of the Turkish world (supposedly in northern China).[35] He knows Turkish proper, the

[31] For the arrangement of the material, see Bergsträsser 1921; Kelly 1972–76: 3; Dankoff and Kelly 1982–85, vol. 1: 31–40; Ermers 1999: 17–20, 50–54.

[32] Miller 1926–31, vol. 5: 142.

[33] Devereux 1959: 138; Pritsak 1959: 100. For the Qarakhānids, see now *Cahiers d'Asie Centrale* 9, 2001, devoted to *Études Karakhanides*.

[34] Miller 1926–31, vol. 5: 148; Herrmann 1935: 26f.

[35] Al-Kāshgharī speaks of his sojourns with the people of Farghāna and in the Land of Shiqnī (409,2f.), with Yaghma (171,13; 445,17–446,1; 544,7f.), Yaghma in Kiñüt (83,3–5), Yaghma and Tukhsi (406,16f.), Tukhsi, Yaghma and Čigil (474,16f.), Yaghma, Tukhsi, Oghuz and on the fringes of Uyghur (416,12), with crude Turks (*adjlāf al-Turk*) in the frontier cities (459,9), with genuine Turks (*ṣamīm al-Turk*) in the farthest margins of the Islamic world (517,11), and of his stays in other frontier cities of the Islamic world (511,15). On al-Kāshgharī's travels, see Pritsak 1951: 99f., 103,

Royal Language (*Khāqānī*) spoken by the Qarakhānids of Kāshghar, and is familiar with the languages of Türkmän, Oghuz, Čigil, Yaghma, and Qirqiz (3, 3–7; 69,4–8).[36]

But is there a way to teach a number of languages in one and the same book? Al-Kāshgharī's starting point is his own language, *Khāqānī*. To switch to one of the other languages, he gives his reader phonetic and morphological rules to apply and quotes the exceptions to these rules, namely, the words used in this or that tribe.[37] He emphasizes that the reader who memorizes all his examples and applies all his rules can understand any Turkic language (304,10–17)—thence the admonitions to understand the rules (16,18; 304,17; 406,12; 517,8; 597,15) and to apply them (27,3; 27,11f.). To address the members of a given tribe, the reader needs to learn the appropriate words and expressions, which is why al-Kāshgharī insists on the mastering of comprehensive rules. The purpose of the yellow dots is therefore to display the geographical repartition of the main features of all the Turkish languages. Taken together, al-Kāshgharī's text and map provide the same information as a dialect atlas today that shows the distribution of concurring linguistic features.

Transmission

Transmitting text and transmitting maps obey different rules. By comparing text and map, we can discover the original appearance of both and identify the changes the copyist introduced in the map.[38] With the Istanbul manuscript, we are fortunate to be only one step removed from the manuscript the author penned.

113; and Pritsak 1959: 100. On the frequency with which al-Kāshgharī cites certain tribal languages, see Doerfer 1987: 106.

[36] About al-Kāshgharī's dual nature as Muslim scholar and Turkish nobleman, see Dankoff and Kelly 1982–85, vol. 1: 4f.; Paul 2001: 23.

[37] Doerfer 1987: 107 compares al-Kāshgharī's way of giving examples to a picture that has a single focus and a blurred background. The focal point is the single word that corresponds to a specific dialect, while all the other words are in *Khāqānī*.

[38] More research is needed on how transmission affected Arabic-Islamic diagrammatic maps. See von Mžik 1929: 195; Miller 1926–31, vol. 5: 103; Karamustafa 1992: 4f.; Tibbetts 1992a: 106; Harley and Woodward 1992: 513; Pinto 2004. Sezgin 2000–07, vol. 1: 119f., 124–126, 145–147 deals with the transmission of precision maps. For a list of all names of geographical relevance found in al-Kāshgharī's text and map, see the Appendix to this volume.

Muḥammad ibn Abī Bakr copied al-Kāshgharī's work in Damascus in 1266. If we compare the geographical names found in his text and his map, we realize that he added and lost information in both. The *text*, in its introduction and its main part, mentions 231 different names of countries, cities, mountains, deserts, rivers, seas, lands, and tribes. Names are very frequent in the introduction. Most have a separate entry in the main part, at the place defined by their morpheme type. Some entries are very brief, such as "Abul, a village of ours" (49,7), but many are much longer. The *map* has 125 names in its main part or in the table. Just 85 names are found both in the text and on the map, while 146 appear only in the text, and 40 only on the map.

Most names belong to one of two categories: (1) reference names, and (2) ordinary names of no special significance. The Küčät tribe, for instance, is said to have been settled in Khwārazm (20,7–23). Here *Khwārazm*, a reference name, positions *Küčät*, a plain name. In another case, the Land of Arghu is defined as extending between the cities of Isbīdjāb and Balāsāghūn (25,11f.). In this case, *Isbīdjāb* and *Balāsāghūn* are reference names that situate the *Land of Arghu*, which is also a reference name.

We have 105 *reference names* that provide a kind of reference grid. They are all mentioned in the introduction: the list of tribes (20,7–21,6), the list of languages (24,1–25,15), the list of language differences (25,16–28,17), and/or the map. Of these names, 82 appear on the map (see Appendix, Part A) that is an integral part of the introduction and that localizes the reference names. The 19 names missing from the map, such as *Ṣīn* ("China") and the tribe Čigil (see Appendix, Part B), were probably forgotten by the copyist.

The second group of names englobes 111 *plain names* that figure in the dictionary only, but neither in the introduction nor on the map. Of these, 97 are defined by a hint to a reference name (see Appendix, Part C) and only 14 are left unexplained (see Appendix, Part D).

A smaller, third group of 54 *famous names* refers to well-known countries, cities, rivers, and peoples of the wider Islamic world. Of these, 14 are used in explanations only in the text (see Appendix,

Part E). Others figure on the map only—18 on its main part (see Appendix, Part F) and 22 on its table (see Appendix, Part G).

This list helps us with the issue of transmission. The copyist changed the general layout of the map drastically when he added[39] a survey of the wider Islamic World. On the table at the map's bottom, a central column leads from East Iran through Iraq and West Arabia to the ambiguous "Land of the North Africans, i.e., Spain" (*Arḍ al-Maghāriba wa-hiya Andalus*) and the hot deserts [of the Sahara].[40] Farther north, a column stretches from northwest Iran through the Land of the Kurds to Egypt and Alexandria. Syria-Palestine lies in the extreme north. On the south side, a column crosses southeast Iran, South Iraq, Yemen, and East Africa (*Bilād al-Zandj*). Northwest India, the Land of the Berbers, south Iraq (*Bilād al-Zuṭṭ*), and Ethiopia are in the extreme south.

The copyist who added this table was interested in the Turkish universe and knew Turkish. He respected the general layout of the map but must have considered it incomplete. To the main part on the Turkish world, he added a smaller part on the Islamic world. Compared to al-Kāshgharī's few remarks on the superiority of Islam—almost invisible in the bulk of proud descriptions of the Turkish way of life—Muḥammad ibn Abī Bakr took one step more on the road to Islamization, toward a Turkish-Muslim double identity.

The partition of the Turkish universe into a non-Islamic and an Islamic part is already found in al-Kāshgharī's text. In his introduction, he divides the Turkish realm into a western area that is the domain of the Arabic alphabet and an eastern area, from Kāshghar to northern China, where the Turkic alphabet is used (8,8–10) and which belongs to Greater China (*Ṣīn*, 228,6–9).[41] He adds that the Oghuz erroneously call *Čigil* all the eastern tribes who live between the Amu Darya and northern China. He differentiates between Islamic countries, where mountains and deserts, rivers, and lakes are worth being identified, and non-Islamic countries, where only some

[39] Herrmann 1935: 27f.

[40] Herrmann 1935: 24.

[41] On al-Kāshgharī's terminology and the Qarakhānid perception of being within the Chinese world, see Barthold 1935: 97f.; Dankoff 1973: 234 n. 9, Biran 2001: 78f.

few names need to be quoted (19,17–20,3).[42] In non-Islamic countries, Koran readers are advised to slur formulas that sound indecent in Turkish (168,10–169,1).[43] The only Islamic features of the map are Adam's descent to Earth in Sri Lanka;[44] the Land of Gog and Magog with Alexander the Great's Wall[45] and the City of the Women;[46] and *Djābarqā*,[47] which may allude to Alexander the Great. Mecca and Medina are unmentioned and seem not to exist.[48]

Language also divides the Turkish universe between the Turks proper around the Qarakhānids of Balāsaghūn (11,10f.), who are members of the Čigil tribe, and the Türkmän or Oghuz who gravitate to the Selčuqs, the lords of Baghdad. Al-Kāshgharī keeps his allegiance to his own Qarakhānid family. He declares that their Royal Turkish (*Khāqānī*) is the most elegant Turkish, and puts at the center of his map the Qarakhānid territory with its two capitals of Balāsāghūn and Kāshghar. Marked with a preference for the Khāqānids, his dual loyalty is at the very basis of his work.[49]

As we have just seen, compared to the original work, the copy made almost two hundred years later did lose names (see Appendix, Parts B and D). Moreover, the copyist Muḥammad ibn Abī Bakr was unaware of al-Kāshgharī's fundamental opposition between Greater China (*Ṣīn*) and Byzantium (*Rūm*), the two poles of the Turkish world.[50] Of the three parts of Greater China, he kept Upper

[42] When he discusses lake names, al-Kāshgharī emphasizes that Islamic and non-Islamic countries need to be treated differently (502,16f.).

[43] On al-Kāshgharī's viewpoint on the struggle between Muslims and non-Muslims (mainly Buddhists), see Brockelmann 1922–24: 10–19; Dankoff 1975: 69f.

[44] Herrmann 1935: 22.

[45] The *Alexander Romance* is also mentioned in al-Kāshgharī's text (24,10–12; 57,16–58,9; 68,13–69,4; 69,11; 179,10f.; 198,9–13). For al-Kāshgharī's *Alexander Romance*, see Miller 1926–31, vol. 5: 146; Herrmann 1935: 22; Devereux 1959: 137; Dankoff 1975. On locating the Land of Gog and Magog with its wall in the southeast instead of the northeast, as usual, see von Mžik 1929: 180f., 184–186; Anderson 1932: 91–103; Monchi-Zadeh 1975: 177–179. A connection may exist with the imaginary Qāf Mountain, a place encircled by a wall that reflects the Indian Mount Meru.

[46] Dankoff 1973: 240 n. 24.

[47] Wensinckh 1918: 31f., 36.

[48] Devereux 1959: 138.

[49] Dankoff and Kelly 1982–85, vol. 1: 46f.

[50] Al-Kāshgharī mentions the opposition between *Ṣīn* and *Rūm* more than once (20,15–21,4; 25,13; 27,12–14). He puts the Lands of the Turks around the Caspian Sea, between Özkänd, Byzantium, and China (510,6–8). He cites a linguistic feature common to Oghuz and all nomads between Rūm and China (262,9f.). Pritsak 1959:

China (*Māṣīn*, i.e., northern China) and Lower China (*Kāshghar*, Xinjiang) at the top of the map and in its center, but he omitted Middle China (*Khitāy*, central China) in between. Now visually meaningless, the dot entitled East Africa (*Bilād al-Zandj*) might originally have been called *Rūm*. As he added the table, the copyist probably deleted Byzantium (*Rūm*), which is puzzling—although Byzantium had lost its power by 1266, the Rūm Selčuq of Konya were among the most powerful Turkish states of the time.

Muḥammad ibn Abī Bakr omitted the tribes' names not because they had become irrelevant but rather because the tribes had meanwhile settled elsewhere. Some of their names can be reconstructed from the text. For instance, Muḥammad ibn Abī Bakr records in his text that the Čigil tribe, the tribe of the ruling dynasty, settled along the Ila River on Arghu land, between Isbīdjāb, Balāsāghūn, and Ṭarāz (58,16f.; 198,7f.; 205,17; 474,16; 520,9f.). Therefore, on the map, we can insert *Čigil* between those three cities. The dot east of *Barsghān* could be the city of Qayās (198,7f.). According to the text, the three tribes Yaghma, Tukhsi, and, again, Čigil lived along the Ila River, in part in the city of Qayās (58,16; 198,7f.; 205,17; 213,6; 520,9f.). Their locations could easily match the remaining three dots east of *Barsghān*. At the center of the map, the mountain square is best attributed to the domains of Yaghma, Tukhsi, and Čigil.[51] This enhances the ethnic focus of the map layout: The core of al-Kāshgharī's map is not taken up by the Qarakhānid capitals Balāsāghūn and Kāshghar but by their main tribes, namely, Čigil, Yaghma, and Tukhsi. East of the mountain square, the Tibetans (*Tübüt*) find their home between *Khitāy*, *Kāshmīr*, the five Uyghur cities, and India (179,2–7). The tribes of Tañut, Yapāqu, Känčäk, Oghrāq (in the frontier city Qara Yighāč), Qarluq, and Qirqiz could be identified with the many—too many—dots south of the central mountains. Muḥammad ibn Abī Bakr also forgot two more names: Bukhārā needs to be one of the three unnamed dots west of the mountain square and south of Tashkent (*Shāsh*), and Yañī Baliq, one of the five Uyghur cities (69,10f.; 191,1), is the nameless dot in between the four named cities. Lack of familiarity with Central Asia—or just

101 also notes that al-Kāshgharī mentions *Rūm* many times in his text, but not on his map.

[51] For Čigil, Yaghma, and Tukhsi as the three parts of Qarluq, see Pritsak 1951: 271 n. 5.

negligence—may explain why the copyist erroneously calls the Indus the Syr Darya (*Sayḥūn*).[52]

Conclusion

Arabic-Islamic geographers used diagrammatic maps that closely interacted with texts as one of three devices they had at their disposal, the other two being precision maps and texts. Reading al-Kāshgharī's map as one of those diagrammatic maps shows that he basically speaks the same visual language they did: Like Arabic-Islamic geographers focused on cities of the Islamic world, al-Kāshgharī, within his textbook on Turkish language, focused on the tribes of the Turkish world. The main aim of his map was to show the distribution of concurring linguistic features—a kind of dialect atlas to enable his readers to learn any Turkish language they wished. Comparing text and map thus allows us to reconstruct most of the original map and to understand how copying changed text and map in different ways.

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[52] Miller 1926–31, vol. 5: 144.

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CHAPTER EIGHT

THE *BOOK OF CURIOSITIES*: A MEDIEVAL ISLAMIC VIEW OF THE EAST

Yossef Rapoport

In June 2002, the Department of Oriental Collections of the Bodleian Library in Oxford acquired an Arabic manuscript of considerable importance to the history of medieval cartography.[1] This newly discovered manuscript contains a remarkable series of early maps and astronomical diagrams, most of which are unparalleled in any Greek, Latin, or Arabic material known to be preserved today. The book, entitled *Kitāb gharā'ib al-funūn wa-mulaḥ al-'uyūn,* loosely translated as "The Book of Curiosities of the Sciences and Marvels for the Eyes," is divided into two parts, one concerning the heavens and one concerning the earth. Although the name of the author is not known, internal evidence suggests that the book was composed in the first half of the eleventh century, most probably in Egypt. It appears that the present manuscript was copied in Egypt or Syria in the late twelfth or early thirteenth century.

The second part of the book, on the earth, is of great interest to historians of cartography. According to the author, this second part is largely dependent on the *Geography* of Ptolemy. In general, though, our author's interest is descriptive and historical rather than mathematical. Along with geographical and historical texts, the author provides two world maps, one rectangular and one circular, the circular being of the type of world map usually associated with al-

[1] The manuscript has been given the shelfmark *Ms. Arab. c. 90*. It is the subject of an ongoing major research project program, based in the Bodleian Library and The Oriental Institute, University of Oxford. The preliminary results of this research have been published in Johns and Savage-Smith 2003; Rapoport and Savage-Smith 2004. In 2007, the manuscript was published electronically (http://cosmos.bodley.ox.ac.uk).

Idrīsī.[2] He then follows with maps of the great seas known to him, which were the Indian Ocean, the Mediterranean, and the Caspian. The author was particularly interested in depicting the shores of the Mediterranean, of which he probably had firsthand knowledge. Besides the detailed schematic map of the coasts and islands of the Mediterranean, the treatise also contains unique maps of Sicily, Cyprus, and the commercial centers of al-Mahdiyya in North Africa and Tinnīs in Egypt. The treatise also includes five unique river maps of the Nile, the Euphrates, the Tigris, the Oxus (Amu Darya today), and the Indus.

Of particular interest is the rectangular world map (color fig. 8.1), which is the only rectangular world map to be preserved from antiquity or the medieval world. Its most intriguing feature is a scale bar drawn at the top of the map, along what appears to be the equator. Although the coastlines on the map are highly stylized, there are several features of this world map that suggest that the author had before him a world map that was mathematically plotted. It seems likely that he used a prototype that was either based directly on the tables of al-Khwārazmī (d. ca. 847) or on similar tables, using an orthogonal projection that resulted in a rectangular shape. Such a prototype would have included a scale and numerous labels for individual localities, as are found on this world map.[3]

The manuscript is, moreover, a significant example of the medieval Islamic knowledge about, and representation of, the lands of Central and East Asia. The *Book of Curiosities* contains a set of unique maps of the Indian Ocean, the Indus, and the Oxus, which are the focus here. The importance of these eleventh-century maps is twofold. First, they represent some of the earliest Islamic mapping of Asia. As such, they allow us to follow the early development of the Islamic cartographic tradition with regard to East and Central Asia. Second, the detailed maps of the seas and rivers of the East draw a relatively complete picture of the routes along which commerce and knowledge traveled back and forth between China and Western Asia.

[2] On the circular world map attributed to al-Idrīsī, and for a list of preserved copies, see Ahmad 1992.

[3] See Rapoport and Savage-Smith 2008, and the discussions of this map by Jonathan Bloom and Andreas Kaplony in this volume.

Much of the *Book of Curiosities* is devoted to itineraries, and this chapter follows in the author's imaginary footsteps by tracing his conception and knowledge of the routes to China. The first section is devoted to the representation of the Silk Road across Central Asia. The second section considers the overland route along the Indus and the Ganges, while the third focuses on the *Book of Curiosities*' conception of the maritime route to China along the coasts of the Indian Ocean. The interrelationship between the different visual representations of Central and East Asia is assessed in the conclusion.

The Silk Road

The most detailed map of Central Asia in the *Book of Curiosities* is the map of the Oxus, or Amu Darya, called in medieval Arabic *Nahr Djayḥūn* (color fig. 8.2). The river is shown arising from an unspecified mountain to the north, with various springs and larger tributaries flowing into it as it turns southward. Five tributaries are given names before the main part of the river turns north to the Aral Sea (*Buḥayrat Khuwārizm*), indicated as a large oval near the center of the diagram. The unlabeled river approaching the Aral Sea from the right (east) is the Jaxartes, or Syr Darya, the medieval *Nahr al-Shāsh.* At the lower left of the map, the city of *al-Fāryāb* is indicated on the mountain range with a river running from it toward the Oxus, above which is *Balkh.* Samarqand, curiously, is not indicated; the red dot to the right of that labeled *Bukhārā* was probably intended to represent Samarqand but for some reason was not labeled as such. Most importantly for our purposes here, the map does not show any trace of an itinerary toward China.

The visual representation of the Central Asian lands is unique. The labels on this map correspond closely (taking into consideration the misunderstandings of copyists) to the labels of the early Balkhī School, and especially to those of Ibn Ḥawqal, on the maps of Transoxania and Khorasan. But this map of the Oxus differs from the maps of the Balkhī School precisely because its main subject is the river, rather than the region or the administrative unit. This map is one of five river maps found in the *Book of Curiosities*—the other rivers being the Nile, Euphrates, Tigris, and Indus. The conception of river maps, rather than regional maps, may be derived from the work of al-Khwārazmī (d. ca. 847). The map of the Nile in the *Book*

of Curiosities is quite similar to the map of the Nile made by al-Khwārazmī.[4] Given the textual reliance of the *Book of Curiosities* on al-Khwārazmī's geographical treatise, it seems likely that some of the other maps were also adapted from geographical illustrations made by al-Khwārazmī, which are no longer extant.

Although the Silk Road itself is not depicted, the author of the *Book of Curiosities* was familiar with at least one account of a journey over the Silk Road and attempted to render this account visually. A striking example is the illustration of Lake Issıq Kul, which would have been seen by most travelers along the Silk Route during this period. The map (color fig. 8.3) is found in a chapter devoted to the lakes of the world. The label under the map reads:

> A lake in the land of the Turks, by a village called *Ayābdjī* (?), near the tents of the Čigil. The lake is called *al-Sikūlah* (Issıq Kul), and it takes ten travel days to go around it. Seven and [thirty rivers?] flow into it, but its water is salty. Around the lake is the domain of the Pečeneg Turks. These people have an annual celebration in which they circumambulate this lake. . . . It is one of their most noble celebrations.[5]

This description appears to be derived from the account of Tamīm ibn Baḥr's journey from Ṭalās to Bēsh Baliq, the Uyghur capital on the Orkhon. In his account, dated 821 CE, most fully preserved in the unabridged Mashhad manuscript of Ibn al-Faqīh (fl. 902), Tamīm mentions that the local people in the city of Barsghān circumambulate the lake once a year in the spring, in a kind of a religious rite. Tamīm also states that water enters this lake from the direction of Tibet through 150 streams, large and small, and that its length is a journey of 40 days by camel.[6] The Čigil nomadic tribesmen who live on the shores of the Issıq Kul are also described by the anonymous author of the *Ḥudūd al-ʿālam* writing in 982.[7] It therefore seems that the author had before him the text of Tamīm's account, and possibly other earlier Arabic geographical texts, which he then attempted to fit onto a symbolic image. On an otherwise schematic

[4] This map is preserved in a unique manuscript now in Strasbourg. See al-Khwārazmī 1926: pl. III.

[5] Bodl. Ms. Arab. c. 90, fol. 40b.

[6] Minorsky 1947–48: 280.

[7] *Ḥudūd* 1970: 98–99. Minorsky suggests that the chapter was taken from the work of al-Djayhānī, who had before him the complete account of Tamīm ibn Baḥr (*Ḥudūd* 1970: 297). For further references to Lake Issıq Kul in Arabic geographical literature, see Barthold and Spuler 1978.

representation of all lakes as perfect circles, the author illustrated characteristic features, such as a mountain in the middle of the lake or an unusually high number of inflowing rivers. The copyist of the present copy, unfortunately, decided at some point that the illustrations were superfluous, and most of the lakes are merely described textually.

The Indus-Ganges Map

The Indus-Ganges map (color fig. 8.4), untitled in the original, is one of the five river maps found in the *Book of Curiosities*. Curiously, it represents the major rivers of northern India—the Indus, the Ganges, and perhaps also the Brahmaputra—as one continuous river system that runs from east to west across the northern part of the Indian subcontinent. This single river originates in the mountains of Tibet,[8] shown as a red landmass at the top of the map, and then flows down what may be taken to be the actual course of the Brahmaputra in eastern Bengal. The labels at the center of the page refer to Hindu cities along the banks of the Ganges, such as *Benares*, *Prayāg* (Allāhābād), and, most prominently, *Qanawdj*,[9] the imperial capital of the Gurjara-Pratīhāra dynasty (836–1037). The map then appears to show the Ganges running northward—in the opposite direction to its actual flow. After receiving six tributaries the river bends southward, and then clearly represents the river Indus. The bottom part of the page shows *Multān* and *al-Manṣūrah*, the Muslim centers of Sind, along the Lower Indus. The river eventually empties into the Indian Ocean, marked by a green square.

The map is dominated by two itineraries, one from the Muslim center of Multān to Qanawdj, and another from Qanawdj toward China. The city of Qanawdj is the most prominent locality on the map, described as the capital of India and the seat of its ruler, whose

[8] The label is wrongly written as *djibāl 'KBYT*, undoubtedly a mistake for *djibāl al-Tubbat*. This is but one example of the pervasive copying mistakes in the manuscript.

[9] The label is wrongly written *Futūḥ*, instead of *Qanawdj*. The Sanskrit name of the city, Kanaakubdja or Kanyākubdja, was rendered by Arab geographers as *Qanawdj* or *Qinnawdj*. Today Qanawdj lies in the Farrukhābād district of present-day Uttar Pradesh. Tripathi 1959: 3; Dames and Burton-Page 1978.

army consists of twenty-five hundred elephants.[10] Qanawdj's visual prominence is in complete accord with al-Bīrūnī's slightly later description of its central location: "The middle of India is the country round Qanawdj, which they call *Madhyadeśa*, i.e., the middle of the realm. It is the middle or the center from a geographical point of view, insofar as it lies halfway between the sea and the mountains, in the midst between the hot and cold provinces, and also between the eastern and western frontiers of India."[11] In its heyday, Qanawdj was the nodal point of the trade routes for the entire subcontinent. In effect, al-Bīrūnī portrays the geography of India as a list of routes connecting the city with the different parts of India in all directions.[12]

The first part of the itinerary depicted on the map is from Multān to Qanawdj, from the Upper Indus to the center of the Gangetic valley. In pre-Islamic Buddhist sources, there is frequent reference to the important trade route that proceeded from the Indus delta, usually via Arōr and across the Rajputana Desert, to Mathūra (modern Muttra), where it joined up with the main India trade route down the Ganges.[13] Early Islamic geographers attest to the continuous use of this desert route through Mathura, notwithstanding the Muslim conquest of Sind.[14] The author of the *Ḥudūd al-ʿālam* mentions that the merchandise of India is brought to Arōr and other small towns on the eastern banks of the Indus, all located south of Multān.[15] By the eleventh century, however, Multān had become the western terminus point of the desert route coming from the Gangetic valley.[16]

The visual representation of the itinerary between Multān and Qanawdj on the map suggests a route that ran away from the river,

[10] Variant spellings of the name of the king of Qanawdj are cited in Arabic geographic literature, such as *Barūzah* and *Baʾūzah* (al-Masʿūdī 1965–79, vol. 1: 197). Indian historians offer diverse interpretations for this name (Tripathi 1959: 268; Majumdar 1964: 32). Intriguingly, the name *Būrah* appears on this map as the name or title of a king of an unidentified locality between *Multān* and *Qanawj*.

[11] al-Bīrūnī 1958: 157; English translation based on Sachau 1988, vol. 1: 198.

[12] Sachau 1988, vol. 1: 200–209; vol. 2: 316–320; Wink 1990: 288. These routes are finely illustrated in Schwartzberg 1992: pl. IV.3 (2).

[13] Law 1973: 8, 58; MacLean 1989: 59–63.

[14] Ibn Ḥawqal 1938–39, vol. 2: 327.

[15] *Ḥudūd* 1970: 89–90; 123.

[16] al-Bīrūnī 1958: 161, 164; Sachau 1888, vol. 1: 202, 205. For al-Bīrūnī's itineraries, see also Schwartzberg 1992: pl. IV.3 (2).

quite like the desert routes described in the geographic literature. However, the labels identified so far point to a route that went along the eastern tributaries of the Indus and then southward along the western branches of the Ganges, to the north of the Thar Desert. The labels on the map are badly corrupted through miscopying, and only a few can be identified with certainty. Coming from Multān, the second label reads *Dāwarbūr*, which is probably Dhavalpurī or Dēōpālpūr, modern Dholpur, on the Bēāh tributary of the Indus, about 200 kilometers east of Multān.[17] The fifth label, which reads *Bānāshwar*, is probably the city of Thaneswar or Thānesar, famed for its Hindu shrine, which is located on the upper Jumna tributary of the Ganges.[18] It is here that the western branches of the Indus and the eastern branches of the Ganges are the closest. Although there was no canal connecting the upper tributaries of the two rivers, their mere proximity may have been the cause of the mapmaker's inability to distinguish between the two rivers. The route then appears to continue southward along the course of the Jumna. The next label reads *Sūrawah*, which is possibly a gross corruption of *Mathūra*, noted by other medieval sources as the chief entrepot on the Indus-Ganges route.[19]

The second section of the itinerary is entitled "The Road to China from [Qanawdj]"[20] and is a unique account of an overland passage from northern India to China, either through Tibet or through Assam and Myanmar. Evidence, mainly from non-Muslim sources, suggests that the ancient overland passage from India to China through Assam and Myanmar emerged as a viable and effective route between the seventh and the mid-ninth century.[21] The itineraries of Buddhist monks show that the starting point for the journey to China was Prayāg (Allāhābād) on the confluence of the Jumna

[17] Dhavalpūrī (modern Dholpur) was the seat of government for a branch of the Chāhamāna dynasty during the ninth century, apparently as feudatories of the Pratīhāras of Qanawdj; see Ganguly 1964: 108.

[18] In medieval Islamic sources, the name usually appears as *Tānīsar* or *Tānīshar* (al-Bīrūnī 1958: 158); see also Bosworth 2001: 441–442.

[19] Al-Bīrūnī calls it *Māhūra* and says that it lies east of the Jumna, 28 *farshakhs* from Qanawdj (al-Bīrūnī 1958: 158; Sachau 1888, vol. 1: 199; vol. 2: 316). Mathurā was a city of considerable antiquity and high religious sanctity for Hindus. It was plundered by Maḥmūd of Ghazna in 408 H / 1018 CE (Burton-Page 1991).

[20] The end of the sentence has been cut off during one of the rebindings of the present copy of the *Book of Curiosities*.

[21] Sen 2003: 174.

and the Ganges. The pilgrims then followed the course of the Ganges to Benares, Pāṭalīputra (Patna), and Champā before continuing toward Assam. From there various routes led to Myanmar and Yunnan, in southwestern China.[22] Medieval Muslim authors, in contrast, do not mention complete itineraries of this overland route, which was far beyond the realm of Islam. Al-Bīrūnī, the most informed source on India, provides itineraries of trade routes that run eastward from Qanawdj. The first runs to Prayāg but then turns southward toward the East Indian coast. The second follows the Ganges from Qanawdj to the mouth of the river, passing through the important commercial centers of Benares and Pāṭalīputra.

The shortest overland route linking India and China was through Tibet. It was established in the mid-seventh century and acquired a short-lived importance from the mid-ninth to the mid-tenth century, when the Assam-Myanmar route was disrupted by military conflicts.[23] Traces of knowledge of this Tibetan route are found in the works of contemporary Muslim geographers. Al-Bīrūnī describes a third eastern route from Qanawdj toward Assam, and then relates an account of a traveler who climbed the mountains of Nepal and from there reached Tibet and China.[24] The author of the *Ḥudūd al-ʿālam* also describes a river crossing at the Sino-Tibetan border, a sign of some knowledge, even if not firsthand, of the overland trade route from Tibet.[25]

The itinerary from Qanawdj to China represented in the *Book of Curiosities* proceeds eastward along the Jumna and the Ganges, through the cities of Prayāg (Allāhābād),[26] Benares, and Pāṭalīputra (written as *BTZ*, which is probably the shortened form Putra). None of the ten following labels, which appear to be heavily corrupted, has so far been identified with certainty. It is therefore difficult to

[22] Bagchi 1950: 17; Choudhury 1966: 380–385; Lahiri and Chakrabarti 1986; Wink 1990, vol. 1: 260, 273–274. The trade routes through Burma and Tibet during later centuries are discussed and illustrated by Deyell 1983.

[23] Sen 2003: 171–172.

[24] al-Bīrūnī 1958: 159–160; Sachau 1888, vol. 1: 200–201; vol. 2: 317. See also Schwartzberg 1992: pl. IV.3 (2).

[25] *Ḥudūd* 1970: 93, 258. Al-Masʿūdī mentions a merchant who, around 875 CE, sailed to India, and then proceeded partly by water and partly by land to Khānfū (al-Masʿūdī 1965–79, vol. 1: 303).

[26] Nurul Hasan 1960: 417–418.

determine whether the depicted route to China passes through Assam or through Tibet. The label that reads *City of Awlhās* can be interpreted as Lhasa, suggesting a passage to China through Tibet. The possibility of a Tibetan route is reinforced by the visual representation of the mountains of Tibet at the top of the map. The last label on the itinerary reads "the Gate of China" (*Bāb al-Ṣīn*), undoubtedly representing the final stop on the Chinese border. This may be in Yunnan in southern China, but is more likely to be near the Chinese capital of Xi-an in western China, the terminus point of both the Silk Road and the Tibetan route coming from India.

Although the *Book of Curiosities* as a whole was compiled in the first half of the eleventh century, the Indus-Ganges map can probably be dated, on both historical and cartographic grounds, to the ninth or the first half of the tenth century. The description of Qanawdj as the capital of India bears some similarity to the ninth-century account by Ibn Khurdādhbih. It seems to have originated when the Gurjara-Pratīhāra power was at its height, between the second half of the ninth and the early decades of the tenth century. By the end of the tenth century the dynasty had crumbled to the territory immediately surrounding Qanawdj. Sacked by Maḥmūd of Ghazna in 1018, it was no longer the capital of the kingdom by al-Bīrūnī's day.[27] Moreover, the Indus-Ganges map appears to be related to the four other river maps in the *Book of Curiosities*. As noted above, these river maps are unique in the history of Islamic cartography, having no parallel apart from the map of the Nile made by al-Khwārazmī in the first half of the ninth century. It is therefore likely that the river maps in the *Book of Curiosities* are copies of earlier prototypes, possibly also dating to the ninth century.

The puzzling contradiction of the Indus-Ganges map is that the itineraries on the map are accurate as far as we can establish, whereas the depiction of the river systems is confused. Such a unique misconception of the Indian river systems is not attested in any other Islamic or Greek source. Ptolemy and Strabo clearly knew that the Ganges and the Indus were separate rivers, and the *Peutinger Table*

[27] Wink 1990, vol. 1: 284–285. Compare *Akhbār* 1948: 12–13, where the Gurjara king is considered to be the mightiest in India.

demonstrates this distinction visually.[28] Early Arab-Islamic geographers were likewise aware of the distinction between the Indus and the Ganges.[29] At the same time, they sometimes show surprising lacunae in their knowledge of the Indian river systems. Al-Masʿūdī is sufficiently familiar with Indian geography to mock al-Djāḥiẓ for suggesting a connection between the Indus and the Nile.[30] But elsewhere he curiously notes that the Indus (*Mihrān*), like the Nile, flows from south to north.[31] The author of the *Ḥudūd al-ʿālam*, otherwise well informed about India, unexpectedly fails to mention the Ganges at all.

The confusion about the Indian river systems strongly suggests that the *Book of Curiosities*' Indus-Ganges map was not based on first-hand experience. Therefore, the map does not provide conclusive proof that Muslim merchants were actually traveling on this overland route to China. The source for the detailed itinerary from Multān in the Indus valley to China could have been a Hindu or other non-Muslim traveler. It is certain that the routes to Multān served merchants coming from the Gangetic valley and farther east. Multān also attracted substantial numbers of Hindu pilgrims who came to visit the sun-god idol in the city.[32] Aloe-wood was brought all the way from Kāmarūpa (Assam) to the temple of the sun god at Multān, where the merchants then bought it from the priests of the deity.[33] Since Multān attracted non-Muslim merchants and pilgrims from the far eastern reaches of India, it is possible that one of them recounted his itinerary to a Muslim scholar, and the itinerary was then superimposed over what was perceived as the single large river of India.

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[28] On Greek geographical knowledge of India, see Gole 1983: 28–34; Madan 1997; Suarez 1999: 60–77.

[29] Burton-Page 1965.

[30] al-Masʿūdī 1965–79, vol. 1: 113.

[31] al-Masʿūdī 1965–79, vol. 1: 202.

[32] Friedmann 1972; *Ḥudūd* 1970: 89–90, 123.

[33] According to al-Balādhūrī, the shrine of Multān was associated with the image of the prophet Ayyūb, or Job (al-Balādhurī 1958: 617–618). For Muslim geographers, the control of the sun-god idol in Multān saved the Muslim rulers from their more powerful Hindu neighbors (Ganguly 1964: 126–128; al-Masʿūdī 1965–79, vol. 1: 199).

The Maritime Route to China

The *Book of Curiosities*' unique map of the Indian Ocean (color fig. 8.5) is the only Islamic map known to us that depicts it as an enclosed narrow sea, in line with the classical Ptolemaic conception. The author of the *Book of Curiosities* drew this map of the Indian Ocean in two halves. On the right-hand side he drew the eastern half of the Indian Ocean, with Indian and Chinese localities represented along its shores; on the left, the East African coast and islands. The author then joined the two halves into one elliptic and symmetrical form. However, in the present copy the two halves have been misplaced, so that China links up with the Arabian Peninsula while the East African coast links up with the coasts of India to form one landmass. Moreover, some of the itineraries within each section of the map have been written down in an inverse order, showing that the copyist, or even the author, was not familiar with the region.

The details of the African half of the Indian Ocean appear to be original to this manuscript. At the top of the map are the *Lands of Berbera*, that is, the northern coasts of modern Somalia. Several mountains are indicated on the shores of this coast, like the large and protruding *Ra's Djardafūn* (Cape Guardafui) at the tip of the Horn of Africa. The list of recognizable mountains along the Berbera Coast may have had some early Islamic navigational text as its source; it is far more detailed than the description of the Somali coast in the fifteenth-century navigational treatise of Ibn Mādjid. Farther down the East African coast are a number of localities in the *Land of the Zandj* (East Africa). Farther down still are the lands of *Sofala*; the semi-legendary islands of the *Dībādjāt*, usually identified with the Maldives; and the mythical *Wāq-Wāq Islands*. The East African island of Zanzibar (called here al-*Ungudja*, by its Swahili name) is depicted as a large square in the middle of the ocean. Yemen, with its main port of Aden, is located out of sequence at the bottom of the map. It is possible, however, that the mapmaker intended to draw it across from the Berbera Coast at the top of the map, thus accurately representing the Gulf of Aden.

The author's knowledge of the Asian or eastern half of the Indian Ocean was derived from earlier sources, dating to the ninth and tenth centuries. Three Chinese cities are indicated at the bottom of the map, and the longer label describes the wealth, power, and large

population of China. The city names are badly deformed, but it seems that, for a traveler coming from the direction of India, one of the first two cities may be *Khānfū* (Guangzhou),[34] the port of Canton. After the prominent volcano, located by earlier sources near Java and not in China, the map shows another Chinese city, called *Arḥūn*, which we have so far failed to identify. At the very edge of the Indian Ocean, the last label refers to the *Land of Armā'il*, a land with "cities of a weak nation in submission to the ruler of China, who[se inhabitants] have few good qualities and eat ants." The text here is probably derived from Ibn Khurdādhbih, who mentions that *Armā'il* is two months away from China by ship.[35] Though several scholars have identified this land with a synonymous locality in western India, Hubert Daunicht suggests that *Armā'il* could be a mistake for *Baru-Manil*, the bay of Manila in the Philippines.[36] In this map, the *Land of Armā'il* is clearly beyond, rather than before, the great Chinese cities, and is much more likely to represent the Philippines than a locality in western India. Although Arab ships are known to have frequented the Philippines, the islands are otherwise not attested in medieval Arabic sources.[37]

The labels indicated on the Indian coasts at the top of the map refer to localities en route from al-Multān to Qanawdj, as they appear on the Indus-Ganges river map elsewhere in the treatise. This is obviously an arbitrary transposition of Indian place names from the Indus-Ganges map to the map of the Indian Ocean because the road from Multān to Qanawdj did not pass near the Indian Ocean shores and these localities are obviously inland. As in other maps, the presentation here is completely schematic, with mountains and rivers shown stylistically rather than realistically. In fact, as we proceed along the Indian coasts toward China, the localities are simply indicated as "an Indian City," amplifying the effect of an extremely schematic representation. Since the author of the *Book of Curiosities* copied the place names from the river map onto the map of the Indian Ocean, it seems probable that the river map, perhaps like the other river maps in the *Book of Curiosities*, was derived from an earlier

[34] Written as *Khānw.r*, a possible mistake for *Khānfū*.

[35] Ibn Khurdādhbih 1889: 69.

[36] Daunichts 1968–70: 268, 361.

[37] Chinese records show that Arab ships reached the Philippines as early as the ninth century; see Suarez 1999: 48.

source while the map of the Indian Ocean is original to this treatise.

Although the depiction of the Indian Ocean as an enclosed sea may suggest a direct borrowing from Ptolemy, a more detailed observation suggests that this was not the case. As is well known, Ptolemy surmised that the Chinese coast extends southward and the African coast eastward, so that they eventually join up. Muslim geographers were heavily influenced by Ptolemy, and their world maps often envisage the coasts of Africa as running eastward parallel to the coasts of Southeast Asia and China. But all other medieval Islamic geographers, including the two world maps found in the *Book of Curiosities* itself, allow for a narrow opening at the eastern edge of the Indian Ocean.[38] Moreover, it seems that the author, while depicting the Indian Ocean as an enclosed oval, still conceived of a passage between the Indian Ocean and the All-Encompassing Ocean. A long label to the left end of the protruding mountain of Cape Guardafui notes that: "The traveler here encounters the Land of the Zandj (East Africa) at the edge of the All-Encompassing Ocean (*al-Baḥr al-muḥīṭ*). Whoever wants to go there [i.e., to the Encompassing Sea] is thrown back by the waves, but whoever seeks the Land of the Zandj, the sea waves come from behind [and assist him]." In this passage, the author appears to suggest that the open sea beyond the Horn of Africa does lead to the Encompassing Sea, but that the prevailing winds draw ships toward the shores of East Africa.

The depiction of the Indian Ocean as an enclosed sea may be a result of stylistic considerations rather than geographical conception. The general shape of the Indian Ocean appears remarkably analogous to the *Book of Curiosities*' depiction of the Mediterranean Sea in a map that immediately follows. Both these maps have no parallel in other geographical works, and both appear to be original to the author. The author of the *Book of Curiosities* was sufficiently acquainted with sailing in the eastern Mediterranean as to be able to list, in correct sequence, more than a hundred bays and reproduce the names of about a hundred islands. He was not, however, well informed about the Asian coasts and islands, and had recourse to the *Akhbār al-Ṣīn wa-l-Hind*, Ibn Khurdādhbih, or other earlier sources. For Indian localities on the coasts of the Indian Ocean, he

[38] Tibbetts 1979: 77–81.

borrowed in an arbitrary manner place names from the Indus-Ganges river map (apparently copied from an earlier prototype). The itineraries he thus compiled were then superimposed on two rather symmetrical oval forms, which had little to do with the actual coastal features of either the Indian Ocean or the Mediterranean. The harmony of the image was more important, in this case, than the reproduction of physical reality.

Conclusion

Although the *Book of Curiosities*' maps of Central and East Asia cannot be taken as a direct measure of the relative importance of the trade routes coming from the Middle East, they do offer a unique perspective on global trade networks during the early Islamic period. The absence of an itinerary toward China on the Oxus river map is typical of the scant information about the Silk Road in the Arabic geographical literature.[39] The lack of any direct reference to a Central Asian route to China is in line with Étienne de la Vaissière's conclusions about the sharp decline in the importance of the Silk Road during the ninth and tenth centuries.[40] These centuries saw trade shifting to other overland routes, such as the Assam-Myanmar and the Tibet passages. The detailed itinerary of an overland route from India to China along the Ganges is therefore in keeping with contemporary evidence from non-Muslim sources. The presence of this itinerary in the *Book of Curiosities* suggests, moreover, that overland routes through Myanmar or Tibet had greater importance for Muslim merchants than has usually been assumed. It is noteworthy, however, that the depiction of the maritime route in the *Book of Curiosities* is secondhand and derivative. Although the Muslim maritime trade with China is well documented from the early ninth century, the *Book of Curiosities* may be an indication that, at least for the early Islamic period, the importance of the maritime route for Muslim merchants has been overestimated.[41]

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[39] For a summary, see *Ḥudūd* 1970: 225.

[40] de la Vaissière 2002: 318–323; Sen 2003: 168–171.

[41] Sen 2003: 176–182 notes that, between the late tenth and the late twelfth century, the overland routes were dominated by Buddhist monks and religious trade while Muslim and Tamil merchants dominated the maritime commercial trade.

The maps depicting Central and East Asia in the *Book of Curiosities*, like other maps in the treatise, are characterized by their stylized nature and the presence of several cartographic layers. The map of the Indian Ocean, which appears to be original to the eleventh-century author of the *Book of Curiosities*, is the prime example of a stylistic representation. The Indian Ocean is depicted as an enclosed oval sea, even though it was probably not conceived as such. Rather, the oval form is intended to be symmetrical to that of the Mediterranean, and pays no regard to the actual physical outlines. The same is true for the depiction of the lakes of the world, such as the Issıq Kul, which are invariably shown as perfect circles. The maps of the Indus (or Indus-Ganges) and the Oxus probably belong to an earlier layer, possibly associated with the illustrated geography prepared by al-Khwārazmī, of which only the Nile map and three other fragments survive.

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PART IV

THE MEDITERRANEAN ROAD

CHAPTER NINE

CELESTIAL MAPS AND ILLUSTRATIONS IN ARABIC-ISLAMIC ASTRONOMY

Paul Kunitzsch

Celestial maps and atlases are common today. They come from a tradition that began in Antiquity and continued through the Middle Ages. Sky maps in the classical tradition often represent the convex and outer surface of the celestial globe and not the concave and inner surface of the vault that we actually see from our planet.[1] In the Greek and Latin traditions (the latter connected with the corpus of translations and comments on Aratus' *Phainomena*), most maps roughly show the relative positions of the constellation figures. In late medieval times, however, more maps were drawn with precision and used astronomical coordinates, as documented in the star catalogue of Ptolemy's *Almagest*.

Maps of the entire sky are unknown in the Islamic world, although the possibility of mapping the celestial sphere on a plane surface is well attested in theory.[2] The oldest Arabic map of the celestial vault is the fresco in the cupola of the caldarium of the Omayyad desert castle of Quṣayr ʿAmra (east of Amman), constructed for caliph al-Walīd I (r. 705–715).[3] Poorly astronomically informed craftsmen copied the fresco from a Greek celestial globe in "globe view," as drawn on the surface of the celestial globe. Their work displays the inner and concave surface of the vault in ways that are contrary to the human experience of the sky. It thus appears that specimens of Greek celestial globes survived into the early Islamic period.[4] Ara-

[1] For a list of manuscripts showing such so-called planispheres, see Roth 1945: 332–333.

[2] See, for instance, al-Bīrūnī 1977, Berggren 1982, and Richter-Bernburg 1982.

[3] See Saxl 1932, Almagro et al. 1975, and Brunet et al. 1998.

[4] Ibn al-Ṣalāḥ (d. 1154) mentions a book that described a Greek celestial globe, datable to 738. Ibn al-Ṣalāḥ 1975: 72–73 (p. 132 in the Arabic text).

bic-Islamic astronomers afterward followed the Greek model and continued to produce celestial globes until the nineteenth century. About 130 Arabic-Islamic celestial globes survive today.[5] In Arabic-Islamic astronomy, maps of the entire sky exist only on celestial globes and, in an abstract form, on the *retes* of astrolabes.

The astrolabe is a two-dimensional representation of the phenomena appearing in three dimensions. It consists of a fixed basic plate showing terrestrial coordinates (the horizon and its parallels, the so-called *almucantars*) for a given geographical latitude. A perforated plate, the so-called *rete*, or net, rotates above it and represents the sky; it contains the ecliptic circle and pointers for the positions of a limited number of stars. The astrolabe thus imitates the rotation of the sky above a specific place on earth. For use in several locations, several plates with a range of geographical latitudes were usually incorporated in the instrument. The number of stars has varied from 17 stars in the tenth century to nearly 70 stars in the seventeenth century and later.[6] The *rete* of the astrolabe does not show the complete sky, only the items that are needed for orientation and for setting the instrument at a given time. The sky represented on the *rete* is in globe view.

We have also kept drawings of the individual 48 constellation figures that Ptolemy devised in the *Almagest*. Although Arabic-Islamic astronomy only knew these 48 constellations, the influence of modern European star maps seeped in at times during the seventeenth and eigtheenth centuries. An example is an astrolabe by Muḥammad Mahdī al-Yazdī of 1654–1655. He added to his instrument a plate showing on its two sides complete maps of the northern and southern celestial hemispheres. He depicted some of the "new" constellations discovered in the southern hemisphere by Europeans by the end of the sixteenth century. As a model for his two maps, he probably used the two star maps that Melchior Tavernier made in Paris around 1650. Melchior's brother, Jean-Baptiste Tavernier, would

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[5] Savage-Smith 1985.

[6] For a list of astrolabe stars in Arabic-Islamic astronomy (and on derived European instruments), see Kunitzsch 1959: 59–88. David A. King has launched a project to catalogue all existing Islamic and European astrolabes up to ca. 1550. See King 1991.

have brought them to Persia during his fourth trip to the Near East, from 1651 to 1655.[7]

Arab cartographers knew the details of Ptolemy's constellations through the Greek celestial globes that survived into the early Islamic period and through translations of Greek astronomical texts like the *Almagest*.[8] The most influential author was Abū l-Ḥusayn ʿAbd al-Raḥmān al-Ṣūfī (Iran, tenth century). In his *Book on the Constellations* (*Kitāb ṣuwar al-kawākib*) he gave full-length descriptions of the 48 constellations and added to each constellation two drawings, one showing it as seen in the sky, the other as seen on the globe. His tenth-century book served as the model for the depiction of the constellations by Arabic-Islamic astronomers, both on celestial globes and in written works. Independently from Greek scientific works, Arabs had their own knowledge of the sky and popular star lore. Al-Ṣūfī reintroduced many old Arabic star names and identified individual stars with their corresponding stars in the *Almagest*. With rare exceptions, he did not illustrate the old Arabic asterisms.[9]

Al-Ṣūfī is also known as the first astronomer to mention the Andromeda Nebula (M 31), a neighboring galaxy of ours. Ptolemy did not mention it when he registered as "nebulous" a number of objects in his star catalogue. In a drawing of Andromeda (as seen in the sky) with the figures of two fish across her body—two fish from old Arabic star lore—the nebula is indicated by a group of dots near the fourteenth star (ν Andromedae). Manuscripts of what I have called the "Ṣūfī Latinus Corpus" accurately rendered these dots without knowing what they meant.[10] Al-Ṣūfī's book itself was not translated into Latin in the Middle Ages,[11] although the German astronomer Peter Apian had the good fortune to find a copy of it. An Arabic speaker translated part of it for him. In a star map twice

[7] Savage-Smith 1992: 65–68. Other examples are the two hemispheres in Ibrahim Müteferrika's printed edition of Ḥādjdjī Khalīfa's *Djihānnumā*, Istanbul 1732 (see Lachièze-Rey and Luminet 1999: 90, fig. 144), and the two hemispheres in an Indian manuscript, ca. 1840 (see Stott 1991: 122–123).

[8] Kunitzsch 1974; for the names of the constellations, see Kunitzsch 1974: 169–212; for the descriptive terminology of the stars, see Kunitzsch 1974: 217–370.

[9] Kunitzsch 1986a.

[10] The "Ṣūfī Latinus Corpus" was allegedly compiled in Sicily in the second half of the thirteenth century. It consists of Ptolemy's star catalogue in the Latin version made by Gerard of Cremona from Arabic, a drawing of each constellation derived from al-Ṣūfī's *Book on the Constellations*, and other text parts. Kunitzsch 1987b.

[11] Kunitzsch 1986a: 66–77; 80–81.

published in 1533, Apian was thus able to include several old Arabic asterisms, completely drawn as full figures.[12]

As we have seen, mapping the sky in Arabic-Islamic astronomy was restricted to celestial globes and, in reduced form, to the *retes* of astrolabes. Complete star maps in a plane representation appeared only in the seventeenth and eigteenth centuries and were derived from contemporary European models. The constellations known and used until then were Ptolemy's 48 constellations. Their figures obey the model transmitted through Greek globes and texts, while the depictions are usually based on the drawings by al-Ṣūfī in his *Book on the Constellations*. Features like facial expressions and dress details were, of course, influenced by the conventions of the historical context. Apart from al-Ṣūfī's book, drawings of these constellations appeared in works of cosmography, such as the *Rawḍat al-munadjdjimīn* (late eleventh century) by Shahmardān and *ʿAdjāʾib al-makhlūqāt* (thirteenth century) by al-Qazwīnī. Both authors directly followed al-Ṣūfī.

Arabic-Islamic astronomers usually included in their writings either the complete catalogue of 1,025 stars, arranged in 48 constellations in the Ptolemaic tradition, or shorter tables of the most significant major stars for use on instruments. Their geometrical diagrams illustrate calculation procedures to solve questions in theoretical astronomy. They often include diagrams on cosmological phenomena, such as eclipses and the arrangement of the celestial bodies in the classical geocentric system.

Astrology and divination formed another field in which illustrations were often added to texts. Here the planets are depicted anthropomorphically, with houses, human figures, and other attributes indicated by astrological configuration.

The illustrations discussed here are further analyzed by Živa Vesel and other scholars in a volume to be published by UNESCO and Iran University Press.[13]

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[12] Kunitzsch 1986b; 1987a.

[13] Vesel et al., forthcoming; see now also Caiozzo 2003; Ackermann 2004.

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CHAPTER TEN

REVISITING CATALAN PORTOLAN CHARTS: DO THEY CONTAIN ELEMENTS OF ASIAN PROVENANCE?

Sonja Brentjes

Several visual elements in two Catalan portolan charts of the fourteenth century can be understood only when placed in the context of diverse Asian cultures. In what follows, I compare these elements to images from various Asian societies (Byzantine, various Islamic, Turkic, Sogdian, Sarmatian, Uyghur and Chinese) that are present on different material (miniatures, murals, ceramics, metal works, ivories, glass works, and sculptures). This comparison shows that the iconography of fourteenth-century Catalan portolan charts was built on visual models used in Western Asia rather than on visual models of the Western Mediterranean Sea. This would indicate that these models go back in time and space to the Iranian and Turkic peoples of Central Asia and of the regions around the Don and the Volga rivers. The models would have traveled along the Silk Route, entered Iran and Anatolia, and from there moved to Italy and Mallorca. The arrival of the models in Mallorca via Italy seems to be the most plausible assumption since one of the cartographers is believed to have come between 1325 and 1339 from Genoa, where he already had been engaged in the art of portolan chart making and because major elements of the model are present in another portolan chart produced in the early fourteenth century by a Genoese monk.

The two portolan charts considered here describe complex spatial compositions that bring together physical aspects, religious beliefs, political concepts, and information about rituals and curiosities. Whether all the representations of these types of space embody visual knowledge remains an open question. The mapmakers combined elements of diverse origins in a way that became the norm during the fourteenth century. The model of knowledge and representation

they developed was so successful that portolan chart makers followed it until the second half of the sixteenth century.

Information on the physical geography of Western Asia seem to come from Herodotus, the Bible, Ptolemy's *Geography*, maps adorning Byzantine copies of Ptolemy's work, and Arabic maps. Evidence of an influence of Persian or Turkish texts or maps is missing. In addition to its diverse sources, mapmaking seems to have privileged the translation of the written and the calculated into an image, rather than integrating established visual components of geographical knowledge. Word and number evidently dominated, since they were the basis of several images of major geographical entities, such as rivers, lakes, gulfs, and mountains. In the case of physical space, this dominance leads me to argue that "visualization of knowledge acquired from abroad" is a more appropriate description of the process than "transmission of visual knowledge." One instance differs, however, from this general approach to physical space: A set of two lakes and three rivers in Western Iran points, in its symbolic quality and conflict with nature, to an act of transmission as an image that may originally have described political rather than physical space. Thus creative patchwork—not systematic application of one type of knowledge—is what characterizes the iconography of physical space in the Catalan portolan charts.

In contrast, the iconography of political and religious spaces works with a much more homogeneous set of models. This set of models reflects thirteenth- and fourteenth-century Ilkhanid, Djalāyirid, Timurid, and Turkmen adaptations of elements previously used in Selčuq art. It also comprises certain components of much older origin in Sarmatian, Sogdian, and Turkic visual representations of rulers, nobles feasting at banquets, courtly costumes, furniture, and riding animals. As in the case of physical space, the visual representation of political and cultural space does not rest on models from Mallorca and Italy. The makers of the two Catalan portolan charts appropriated visual models from abroad. They did not translate knowledge about political or cultural aspects into images based on local conventions. It is here that the two Catalan portolan charts can be seen as artifacts incorporating visual knowledge transmitted along the Silk Road. The two mapmakers followed, however, different approaches. Whereas Angelino Dulcert (color fig. 10.8) decorated foreign visual models in his portolan chart of 1339 with Greek and Italian details, the creator of the Catalan Atlas of 1375 (color

fig. 10.1a–c) simplified yet stayed true to the foreign models he had selected.[1]

Introduction

The question of whether or not portolan charts and related world maps were modestly, greatly, or not at all influenced by Arabic or Persian maps and by geographical knowledge from the Islamic world has been answered differently by different historians of various professional expertise. Some, like Anthony Campbell, deny any influence. Others, like Fuat Sezgin, claim a full dependence on Arabic or Persian maps.[2] Between these extremes, scholars such as Joachim Lelewel in the nineteenth and Konrad Miller in the early twentieth century agree that certain mapmakers, such as Petrus Vesconte of Genoa, had seen a circular Arabic world map in the style traditionally ascribed to al-Idrīsī (1154) but likely of earlier origin. Carsten Drecoll has recently summarized some of the main features that confirm that Italian and Catalan circular world maps of the fourteenth and fifteenth centuries were directly dependent on Arabic ancestors related to what then was seen as al-Idrīsī's work. The two Arabic words *charab* and *kamar* in the maps of Petrus Vesconte and Fra Paolino, the shape of Africa, the style through which the inhabited world as a whole is represented, and transliterated place names whose spelling point to an Arabic background are the major such indicators.[3] Maps like Estense C.GA 1 or Borgia XVI contain other elements of Arabic origin, among them the so-called Western Nile, the form of the sources of the Nile in the Moon Mountains, the bird-claw-like form of the Atlas Mountains in North Africa stretching far into Libya, and transliterated forms of Arabic place names on Sicily. The form of the Atlas Mountains is generally accepted as a borrowing from Arabic maps related to al-Idrīsī's regional maps of North Africa.

Sezgin believes that the forms of the Caspian Sea and of the Red Sea in Genoese and Catalan portolan charts and in related world

[1] Angelino Dulcert, Portolan Chart, BnF, Res 08 Ge B 696; Catalan Atlas, BnF, Esp. 30.

[2] Campbell 1987: 381; Sezgin 2000, vol. 1: 310–315, 332–337. See also Sezgin's discussion of other researchers' positions, Sezgin 2000, vol. 1: 285–300.

[3] Drecoll 2000: 42–43.

maps also come from Arabic or Persian ancestors.[4] This is undoubtedly true for one of the two forms by which the Caspian Sea is represented on Vesconte's and Paolino's maps, with its islands and its surrounding ring of mountains.[5] It may also be correct for the other form of the Caspian Sea in the map found in Ms. Paris, BnF, Latin 4939, a map ascribed to either Fra Paolino or Petrus Vesconte. Sezgin also claims Arabic ancestry for the Gulf of 'Aqaba, as represented in many Catalan and Catalan-style maps of the fourteenth and fifteenth centuries.[6] These two cases are, however, less simple to settle than Sezgin seems to allow. Not only is no Arabic or Persian map with the Gulf of 'Aqaba known before 1647, but Byzantine maps of the late thirteenth and fourteenth centuries display it.[7] Sezgin ascribes this fact to an influence of Arabic maps on Byzantine mapmaking.[8] The text of Ptolemy's *Geography*, however, indicates the existence of this gulf, too.[9] Hence its presence on Byzantine maps may well have been the result of reading the Greek text rather than of looking at Arabic maps.

A similar situation can be found vis-à-vis the alternative form of the Caspian Sea in the map of Ms. Paris, BnF, Latin 4939. The outline of the lake resembles strongly the form of the Caspian Sea depicted in al-Idrīsī's regional maps, but their respective positioning differs visibly. Sezgin suggested that other differences in position between Arabic and Italian or Catalan maps came to pass due to a rotation of the original Arabic maps, which the Western mapmakers did not know how to place correctly because they lacked the necessary geographical knowledge.[10] In this case, however, the change in position may not have been caused by the Western author of the map but merely taken over from a Byzantine map of *Sarmatia Asiatica*. The respective regional map in at least one of the extant Byz-

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[4] Sezgin 2000, vol. 1: 339–340, 486–508.

[5] These maps show the Caspian Sea twice. The eastern form of the second sea is stable, but the western shapes of the first Caspian Sea vary considerably from one map to another.

[6] Sezgin 2000, vol. 1: 392.

[7] Sezgin claims without evidence that this map presumably goes back to a fourteenth-century predecessor; Sezgin 2000, vol. 1: 417. Compare also Sezgin 2000, vol. 1: 195–196.

[8] Sezgin 2000, vol. 2: 416. Compare also Sezgin 2000, vol. 1: 55–57, 335–336.

[9] Ptolemaeus 1990: 68.

[10] See, for instance, Sezgin 2000, vol. 1: 335, 342, 475. See also Rapin 1998: 201–225.

antine manuscripts of Ptolemy's *Geography* shows an outline of the Caspian Sea very different from the lake's outline in other manuscripts, and in conflict with the data given in Ptolemy's text. This outline resembles al-Idrīsī's configuration, but again differs sharply both in its positioning and with regard to the rivers flowing into the lake.[11]

The relative weight of Byzantine and Arabic maps and of Greek, Arabic, Persian, or even Turkic textual, oral, and visual information in Catalan portolan charts has been, as far as I know, one of the unasked questions in the discussion on the origins and sources of these maps. I focus on these issues below in relation to two portolan charts of the fourteenth century: Angelino Dulcert's portolan chart of 1339 (color fig. 10.8), and the famous Catalan Atlas of 1375 (color fig. 10.1a–c). The visual representation of mountains as we find it in Arabic and Persian world maps as well as regional maps is not limited to the Atlas Mountains in Africa but is visible in Europe and Asia, too. In what follows, however, I ignore the mountains to focus instead on three "R's" in Western Asia: *rivers*, *rulers*, and *riding animals*. It is here that clear connections to visual forms of Islamic art and to Byzantine maps can be found. The rulers in Dulcert's chart and the Catalan Atlas, and the riding animals (i.e., horses and dromedaries) in the latter, take up visual models of Islamic art in Western Asia during the thirteenth and fourteenth centuries. Several of their aspects can be traced back to pre-Islamic cultures along various tracks of the Silk Road. As for the third "R," namely, rivers, there is further evidence of a bifurcating relationship to Arabic regional maps of the Caucasus region, the Qipčaq Steppes, al-Djazīra (a part of north Iraq), and Arab Iraq (central and southern Iraq) on the one hand, and to Byzantine regional maps of *Sarmatia Asiatica* and *Susiana* on the other.

The Don, the Volga, and a River Linking the Persian Gulf with Lake Van and Lake Urmia

In Angelino Dulcert's portolan chart of 1339 (color fig. 10.8), the Don flows into the tip of the Sea of Azov after a long detour to the east, where it almost meets the Volga, whereas the Volga is formed

[11] Ms. Milano, Biblioteca Ambrosiana, gr. D 527.

by the confluence of two rivers streaming in a balanced opposition from west and east and then flows straight south into the Caspian Sea. On its way the Volga forms a small island and, at the Caspian coast, a five-armed delta. Principally the same picture is displayed in the Catalan Atlas (color fig. 10.1a–b). Both mapmakers show the source of the western confluent of the Volga as well as that of the Don. They come from the same lake in *Ruthenia* (the ancient *Rus*, comprising in today's terms parts of Belarus, Russia, the Ukraine, Slowakia, and Poland). The eastern tributary to the Volga is only portrayed in the Catalan Atlas due to its coverage of all of Asia. It is formed by three small rivers springing up in a mountain north of a caravan of dromedaries and grooms, horses and riders that appears on the Catalan Atlas.

When we look at Byzantine world maps and regional maps attached to Ptolemy's *Geography*, we find similarities and dissimilarities alike. The Don's course in these maps and in the two Catalan portolan charts is principally the same, except that the Volga does not flow straight south in the Byzantine maps. Rather, it shows the same behavior as the Don, although it describes a U-turn to the west, not to the east. Moreover, the eastern river contributing to the Volga does not come from three spring-rivers that originate in a mountain range but begins, like the western tributary, in a lake. The small island that appears in the course of the Volga both in Dulcert's chart and in the Catalan Atlas is also not found in the extant Byzantine maps to Ptolemy's *Geography*. To make things more difficult, not all maps in Ptolemy's *Geography* give the same visual representation of the two rivers. Later Latin world maps based on a Byzantine predecessor show the Volga's two confluents springing up in a mountain range just as the Ptolemaic text claims.

The circular world map traditionally ascribed to al-Idrīsī, but presumably of much earlier origin, likewise does not offer the same visual information as the two Catalan portolan charts. Neither do al-Idrīsī's regional maps of the Qipčaq Steppes and beyond. In the circular world map, the Don springs up from a lake and flows straight south to the Black Sea. The Volga also springs up from a lake, but turns in the middle of its course slightly to the west before returning to its former direction straight south to the Caspian Sea. Its two spring-rivers are missing, as is the small island. In the regional maps,

the Don seems to be called the *Nahr Rushiyya* (River of *Rus*). Its course agrees in principle with Ptolemy's text, with one exception: It comes nowhere near to the *Itil* (the Volga) because the two rivers are separated by a waterway called the *Nahr Saghīn* (River of the [People Called] *Saghīn*). This river connects the Black Sea with the Volga. The course of the Volga also agrees in principle with Ptolemy's text. It turns to the west, crosses a mountain, but then takes a sharp descent toward the south, where it meets a river from the north. This confluent partly springs up in a mountain range and is connected partly through Lake *Sarī* with other northern streams. In the west, the Volga has no confluent. But the mountains that it passes through before turning sharply south receive another river called the *Shalwa*, which starts in a western lake named *Ghanūm*.

This more complex image of al-Idrīsī's regional maps reflects the natural conditions more closely than does the image of the portolan charts. Yet it differs much more from Ptolemy's text than do the Byzantine regional maps. Ptolemy speaks of two rivers starting in the *Hyperboreian Mountains*, which come together to form the *Rha* (i.e., the Volga), and of springs for these two confluents. He places these springs on exactly the same degree of northern latitude.[12] Their meeting point lies 5 degrees farther south. The Byzantine regional maps depict most of these aspects of the course of the Don and the Volga more faithfully than does al-Idrīsī. In all the Byzantine maps I know, Ptolemy's multiple sources are reduced to one spring-lake for each confluent. The small difference in latitude between the spring-lakes and the point of confluence, both in Ptolemy's text and in the maps, is repeated in Dulcert's map and several of the later Catalan-style world maps.[13] The flattened image of the two confluents in the Catalan Atlas (color fig. 10.1a–b) is clearly the kind of change that happens in the process of transmitting written or visual knowledge.

Dulcert's portolan chart (fig. 10.8) does not contain Lake Van and Lake Urmia or the river connecting them to the Persian Gulf. The entire ensemble is, however, present in the Catalan Atlas. While the

[12] Ptolemaeus 1990: 40, 122.

[13] Ptolemaeus 1990: 40. I thank Gerd Grasshoff, who lent me copies of maps from Mss. Roma, Biblioteca Apostolica Vaticana, Urbinas Graecus 82 and Istanbul, Topkapı Sarayı Müzesi, Graecus 57.

image of the Don and the Volga with their confluents and source areas reflects the natural setting and agrees to a large extent with Ptolemy's *Geography*, this is not the case for the rivers that connect the two lakes with the Persian Gulf. As visualized in the Catalan Atlas, these rivers are not images of natural objects that exist today or are known to have existed in the past.

The question as to whether the image of the two lakes and the three rivers of the Catalan Atlas could be an element of visual knowledge transferred from Western Asia to Mallorca or Italy has no easy answer. Some Byzantine regional maps of the Persian Gulf and *Susiana* show a river with two confluents, one springing up in *Susiana*, the other in *Media*. A look in the Greek text of the *Geography* shows that Ptolemy indeed described *Eulaios* as a river that had springs in *Susiana* and in *Media*.[14] Hence the image of two confluents forming a river to the Persian Gulf in the Byzantine maps is a simplification of what Ptolemy taught. It is, however, not identical with the image in the Catalan Atlas and could at best have provided the mapmaker or his predecessor with an inspiration for his own representation. A second possible source of inspiration for the image in the Catalan Atlas may be found in some Arabic and Persian maps of Khuzistan, where an analogous river system is shown at the western border of the region—a river to the Persian Gulf with two confluents. But these rivers are left unnamed in most of the maps. In other Arabic and Persian maps, this bifurcating system is identified as a border separating Khuzistan from its neighboring provinces.[15] But again, neither the rivers nor the borders lead to Lake Van or Lake Urmia. Hence, whether the Byzantine mapmakers or the portolan chart makers used such regional maps as points of orientation or visual inspiration cannot be decided without substantial further investigation, which is beyond the limits of this chapter.

The previous comparison indicates that visual forms were shared between Arabic, Byzantine, and Catalan maps on three levels: between Arabic circular world maps and al-Idrīsī's regional maps; between Byzantine regional maps, Arabic circular world maps, al-Idrīsī's regional maps, and Catalan portolan charts; and between Catalan portolan charts and Byzantine regional maps. In my opinion, this network of relationships points to a shared ancestry. It is

[14] Ptolemaeus 1990: 90.
[15] Miller 1986: 42–47.

nevertheless almost impossible to pinpoint this ancestry with certainty due to the present lack of relevant sources. As is well known, Ptolemy's *Geography* was translated into Latin only in the first decade of the fifteenth century, and the so-called *Version A* of the Byzantine maps was rendered into Latin only some fifteen or twenty years later. Direct familiarity on the part of Catalan and Genoese mapmakers with a Byzantine copy of Ptolemy's *Geography* is thus not the most likely explanation. Nevertheless, it may very well have been possible for these mapmakers to get copies of Byzantine maps attached to Ptolemy's work because as early as the thirteenth century Catalan and Genoese merchants, diplomats, missionaries, and soldiers toured Anatolia, Iran, and the areas north of the Black and Caspian Seas. The same applies to Arabic and Persian visual, written, and oral sources. However, the mere possibility of the transfer of such knowledge is insufficient for making the case that it took place. An example illustrating the complexity of the possible cultural transfer is found in Marino Sanudo, a Venetian patrician whose work is linked with the world maps of Petrus Vesconte, and possibly also with the one of Fra Paolino. Sanudo visited both Constantinople and Syria in the late thirteenth and early fourteenth century. He may have encountered Arabic and Byzantine maps of Western Asia during his visits and shared them with the portolan chart maker as well as with the monk. If so, the influx of visual knowledge from Asian sources into Italian maps of the early fourteenth century may not have been caused by the mapmakers' quest for the newest information; rather, it may have have been indirectly induced by members of the educated elite and their interest in crusade and conquest of the Holy Land.

As emphasized earlier, Angelino Dulcert and the maker of the Catalan Atlas (or their predecessors from whom they borrowed their knowledge) approached the visual representation of physical space in several ways. Their first method takes up objects that exist in nature and tries to capture their profiles by defining elements such as springs and their environments, confluents, enclosed islands, and deltas. The defining elements, when compared with written material, are often linked to astronomical observations and calculations and thus are described by coordinates. The remaining undefined parts are extensions of the defining elements, which may have been based on reliable descriptive instead of numerical information. If such solid

information was, for instance, delivered by eyewitnesses, the extensions share one major feature with the defining elements: They represent local and partial, rather than systematic and comprehensive, knowledge. If not based on such reliable information, the extensions are pictorial representations of beliefs about how a certain geographical entity should appear, either in general or in a particular setting. These extensions differ from the defining elements in their abstract and ideal character. It is this difference that caused the deviations among the various images of the Don and the Volga rivers in Byzantine, Arabic, and Catalan maps, particularly those of the Volga. As a result, although the mapped objects do exist in nature—and although rational attempts were made to represent them according to their existence in nature—the images provided in the different maps do not constitute a single type of knowledge, nor do they reflect one sort of knowledge. Rather, the images are a combination of different kinds of knowledge and convictions whose relationship to truth (i.e., to knowledge) in the eyes of the mapmakers is discernible only indirectly (e.g., through their acceptance by other mapmakers). Hence, while it is undeniable that Byzantine, Arabic, and Catalan maps share important elements in their visual representation of the Don and the Volga, images of the two rivers were not perceived as a fixed unit but were open to change and interpretation while traveling from east to west.

This openness changed in the context of portolan chart making in Italy and the Kingdom of Aragon in the fourteenth century. A process of model building took place that led to fixed pictorial items being accepted by several generations of mapmakers. As a result, visual knowledge emerged that could be transmitted not only from one generation of portolan chart makers to the next, but across space and culture as well. Thus we find fifteenth-century Catalan-style world maps with the same visual representation of the Don and the Volga as in the Catalan portolan charts of the fourteenth century.

The pictorial representation of the river system connecting Lake Urmia and Lake Van with the Persian Gulf does not refer to natural objects, at least not objects that are known to exist today or to have existed in the past. The only possible natural source of inspiration for the river system in the Catalan Atlas (color fig. 10.1b) is the *Eulaios* (Akkadian: *Ulai*, Elamite: *Ula*), although it neither springs up in Lake Van or Lake Urmia nor does it flow directly into the Persian

Gulf.[16] It is identified today with the river Kerkha, a branch of the Kārūn, a tributary to the Shaṭṭ al-ʿArab. In Ptolemy's *Geography*, the *Eulaios* is described by its main defining elements—two confluents and the estuary. Thus its description does not differ in kind from other rivers that are known to exist in nature. This is not the case with the Catalan Atlas, however. Here the river system and its two source-lakes are abstract geometrical symbols—two circles and three straight lines. The allusion to water is given by the wavelike form of the straight lines representing the river system and by the inclusion of such wavelike lines in the interiors of the two lakes.

When the pictorial representation of the two lakes and the three rivers to the Persian Gulf is compared with that of the Don and the Volga, the main difference is the purely geometric form of the former. This geometric form reminds me strongly of the iconography found in maps attached to the books of various Arabic and Persian geographers and travelers, in particular those of the tenth and eleventh centuries, such as al-Balkhī, al-Iṣṭakhrī, and Ibn Ḥawqal. It may well be that the iconographic symbolism of the makers of the Catalan Atlas was inspired by a copy of one of their maps. If that could be proven, then the presence of the two lakes and the three rivers in Western Iran would constitute an instance of an act of "transmission of visual knowledge" as an image, although the truth status of the knowledge visualized here is at least questionable

Troops of Dromedaries and Spotted Horses

The author of the Catalan Atlas (color fig. 10.1b–c) was evidently in love with spotted black, brownish, white, pink, and blue horses. He portrayed them as part of the merchant caravan sent to China by *Jani-beg*, the ruler of the Blue Horde (color fig. 10.6), and as the riding animals of the three Magi in Iran (color fig. 10.3) and of the king of Gog and Magog in Northeast Asia (color fig. 10.7). Horses colored and decorated in this style are extremely rare in the iconography of medieval Latin Europe. But they are often found in miniatures and on bowls, plates, bottles, and cups in the Islamic world. Most of the spotted blue, pink, red, grey, black, white, and brown horses appear in fifteenth-century Timurid and sixteenth- and sev-

[16] http://www.reference-guides.com/isbe/U/ULAI/. Potts 1999: 27–44.

enteenth-century Safavid and Moghul miniatures (color fig. 10.4).[17] Occasionally, they are found on thirteenth- and fourteenth-century Ilkhanid miniatures and ceramics, and even on pre-Ilkhanid book illustrations from northern Iraq, Anatolia, or Iran.[18] In pre-Ilkhanid times, the motif of a spotted horse appears more often on objects such as bowls, plates, and bottles.[19] Spotted horses as an iconographic motif reached the Iberian Peninsula as early as the tenth century. From Islamic objects of art the motif moved into illustrations of Castilian literature.[20] The motif originated in Central Asian painting. Eleanor Sims and Boris Marshak have shown that one of the earliest known spotted horses is found in Khotanese wall paintings of the seventh or eighth century. Other examples of spotted horses are present in Chinese paintings copying a so-called Central Asian style.[21]

The Khotanese horse is linked to Selčuq and Ilkhanid piebald horses through its knotted tail, a feature missing in the Catalan Atlas.[22] The tails of the horses on the Catalan Atlas resemble, rather, the tails of the atlas's dromedaries. These tails are without hair at their upper end. They begin to show hair only at some distance from the tailbone. This kind of tail can be found in numerous portraits of dromedaries on miniatures—for instance, in late-thirteenth-century manuscripts of al-Ḥarīrī's *Maqāmāt*, and on ceramic, metal, and glass objects.[23] Images of spotted horses with camel- (or more precisely

[17] Ms. London, British Library, Add. 25900, f. 250, Niẓāmī, Khamsa, Iskandar visits a hermit; Ms. Philadelphia, Pennsylvania University Museum, NE P. 33, miniature 3, Niẓāmī, Khamsa, Khusraw sees Shīrīn for the first time.

[18] Grube 1968: pl. 62. Pope and Ackerman 1938–39, vol. 10: pls. 632, 633, 644, 708.

[19] Sims 2002: fig. 67; 198, 200, 201. Ceramic plate, Kāshān dated Djumādā II 607 H/November 1210, Freer Gallery of Art, Washington DC. Grube 1968: 30, pl. 23. Maslenitsyna 1975: pl. 12, faience bowl, Rayy, twelfth century; von Gladiss 1986: 86, pl. 123, *mīnāʾī* plate produced around 1200 at Rayy.

[20] *El splendor* 2001: 312, 344. The two images with horses decorated with dots and heart-shaped ornaments are found in manuscripts dated 975 and the first half of the eleventh century. Both ornamental forms appear on many Selčuq art objects.

[21] Albaum and Brentjes 1978: pl. 32.

[22] Grube 1968: pls. 23, 24.

[23] Ms. Paris, BnF, Arabe 5847, ff 94b, 138a. See, for instance, Meissner 1980: pls. 27, 37. An even earlier specimen can be found on a *mīnāʾī* bowl made in Kāshān in 583 H/1187 CE. Shepherd 1974: 79–92; 86, ill. 10. A colored picture of this bowl can be found in Grube 1968: 28, pl. 21. For a Moghul version of such horsetails, see Kurtz 1975: 149, "The Three Sons of Shah Jehan," ca. 1637.

donkey-)like tails are much rarer but can be found on plates and bowls.[24] They can be seen much more often and clearly in Timurid and Safavid miniatures.[25]

It has been assumed that the motif of spotted and brightly colored horses in the Catalan Atlas came from Andalusian, Fatimid, Abbasid, or Selčuq art objects.[26] Against this assumption, I wish to stress the different character of the ornamentation and coloring. Pre-Ilkhanid piebald horses do not show small circles or dots but flowerlike images or larger blotches of irregularly curved shape. Their coloring tends to be less exotic than that found in the Catalan Atlas.[27] Piebald horses in Ilkhanid manuscripts are often depicted with regular small circles. The color of the horses ranges from black and brown to a bright red.[28] Piebald horses in late and post-Ilkhanid manuscripts are adorned with tiny dots and appear mostly in light blue, pink, white, or black.[29] Thus the coloring chosen by the maker of the Catalan Atlas strongly resembles that of late Ilkhanid painting, for instance, the so-called *Small Shāhnāma*, and various manuscripts of post-Ilkhanid origin, while the specks are of an intermediate size and form that fall between those of the Ilkhanid circles and the late and post-Ilkhanid dots.

The dromedaries in the Catalan Atlas show an undeniable similarity with dromedaries as painted in miniatures of al-Ḥarīrī's *Maqāmāt* in the late thirteenth century in northern Iraq. The similarity covers the outline of the animals, the form of their heads, and the graciousness of their posture. In manuscripts of al-Ḥarīrī's *Maqāmāt* we also find a similar way of representing groups of horses

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[24] Watson 1994: pl. 163, bowl made in March 1187, Metropolitan Museum of Art, New York, 64.178.2. Pope and Ackerman 1938–39, vol. 10: pls. 555–811: 686 (donkey rather than horse?!).

[25] von Gladiss 1986: 125, pl. 218, Khusraw and Shīrīn hunting, from an anthology of Iranian poets produced for the Timurid prince Bāysonghor in 1420. Albaum and Brentjes 1978: pl. XIII, Sandjar and the old woman, Bukhara, 1545.

[26] Jonathan Bloom has suggested the Mediterranean basin as the most likely place of origin for the images displayed on the two maps.

[27] Hillenbrand 1994: pls. 144, 145, luster bowl and luster plate. The date of the latter is 1210.

[28] See, for instance, Sakisian 1929, fig. 31. Sotheby's Oriental Manuscripts and Miniatures 1998: 51, pl. 41.

[29] *Sotheby's Oriental Manuscripts and Miniatures* 1996: 59, pl. 50. The manuscript was probably produced in Shīrāz in the 1340s, i.e., is probably of Indjū origin. Lowry 1988: 49, fig. 19; 87, pl. 12.

and dromedaries. Hence the iconography of caravans and riding animals of the *Maqāmāt* may well have inspired the illustrator of the Catalan Atlas. Alternative sources of inspiration may have come from Islamic cultures around the Mediterranean Sea. Examples are ceramic dishes, which were occasionally used as decoration on the outer walls of churches in Pisa, Genoa, and other towns in Italy, Sicily, and further Mediterranean islands, as well as glass and metal objects that were commercial and luxury goods.[30]

Crowned Rulers on Thrones and Cushions

In his map (color fig. 10.8), Dulcert portrayed several princes ruling in different areas. Western Asia shows a single prince, *Uzbeg* (1312–1340), who was the contemporary ruler of the Blue Horde and who resided in Saray. In an inscription south of the Caspian Sea, Dulcert mentions *bon Sayt* as the ruler of all Persia. This name probably refers to the Ilkhanid prince Abū Saʿīd who ruled the region from 1316 to 1335. The author of the Catalan Atlas (color fig. 10.1a–b) knew of three different princes reigning the region, one in Anatolia, one in Iran, and one in the Qipčaq Steppes—the ruler of *Turchia*; the *Rey del Tauris* (color fig. 10.5); and *Jani-beg* (1340–1357), the long-dead ruler of the Blue Horde from Saray (color fig. 10.6), respectively. The *Rey del Tauris* may point to the renewed importance of the town of Tabrīz after the Djalāyirid Uways ibn Ḥasan-i Buzurg had driven out the governor of the Golden Horde in 1358. Yet the author of the Catalan Atlas had no real interest in the various Turkish principalities in Anatolia, nor did he care for the Orthodox princes of Byzantium and Trebizond. His knowledge of the political conditions in Western Asia was evidently less up-to-date and less precise than Dulcert's had been thirty-six years earlier.

In contrast, both mapmakers had specific information about the clothing, crowns, hair and beard styles, and thrones and cushions used by princes in Islamic societies. The author of the Catalan Atlas even portrayed rulers in different regions differently. Dulcert dressed *Uzbeg* Khān in an Ilkhanid-style dress, the sleeves of which were

[30] For examples, see Gabrieli and Scerrato 1979. For a piebald light blue horse in a late Ilkhanid *Shāhnāma* (Demotte), Tabrīz 1330–36, see Boston, Museum of Fine Arts, No. 30.105.

decorated with *ṭirāz* bands on the upper arms. He seated him on a throne comprising a double pedestal and a twofold cushion. In his right hand *Uzbeg* holds a lance with a fleur-de-lys; on his left arm a falcon is seated. His hair falls in curls over his shoulders, and a short full beard covers his face. On top of his head he wears a diadem-like crown. The details of this crown are difficult to see clearly due to damage the map has suffered. A comparison with Fatimid, Abbasid, Selčuq, and Ilkhanid miniatures, coins, ceramics, wall paintings, and metal works of seated rulers indicates that major elements of *Uzbeg's* pictorial representation were taken from eastern Islamic iconographic forms.[31] This is particularly true for the dress, the throne, the falcon, and the cushion.

The iconographic repertoire of the Catalan Atlas is much broader than that in Dulcert's map. The three rulers in Anatolia, *Tauris*, and Saray are dressed differently, have different beards, wear different headgear, and show different sitting postures. The cushion and the waistcoat of *Jani-beg* (color fig. 10.6); the headgear, threefold-plaited beard, caftan, and mace of the Turkish prince; the *ṭirāz* bands at the upper arms of all three rulers and their sitting postures, including the positioning of their arms and hands—all are found in princely images on coins, ceramics, glass wares, metal works, ivories, and miniatures produced under various dynasties of the Islamic world.[32] The caftan and the threefold-plaited beard of the Turkish prince are found in images of Ilkhanid and Timurid princes, while the cap seems to be more closely connected with Turkmen rulers.[33] In contrast to the rather flat headgear of the Turkish prince in the Catalan Atlas, Selčuq iconography more often shows rulers with high fur caps, crowned caps, or trident crowns.[34] I know of no portraits of

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[31] Brentjes 1971: pl. 56; 97. *Sotheby's Oriental Manuscripts and Miniatures* 1998: 54, pl. 41. Allan 2002, pls. 4, 5, 6. Shepherd 1994, pl. 202.

[32] For princely images on coins, see, for instance, Brentjes 1971: pl. 56; 97. For representations on bowls, dishes, and other objects, see Pope and Ackerman 1938–39, vol. 10, pls. 639B, 641B, 707C, 773B. A rider with a threefold plaited beard is shown in the right lower corner of a miniature of the late Ilkhanid Demotte *Shāhnāma* in the Museum of Fine Arts, Boston, No. 30.105.

[33] Andaloro 1995: 41, "Shāh Zār Enthroned," Great Ilkhanid *Shāhnāma*, probably Tabrīz 1330s. Arthur M. Sackler Gallery, Smithsonian Institution, Washington DC. S1986.107. The enthroned ruler wears a caftan, a double-braided beard, a moustache, and shoulder-length hair. See also Lowry 1988: 83, color pl. 10.

[34] See, for instance, the frontispieces to the *Kitāb al-Aghānī*, Millet Kütüphanesi, Istanbul, and the *Kitāb al-diryāq*, Österreichische Nationalbibliothek, A.F. 10, fol. 1a

Ilkhanid rulers wearing flat caps, though courtiers and numerous tribal riders with flat caps can be found. These flat caps appear in two forms. One type differs from the flat cap of the ruler of *Turchia* in the Catalan Atlas, since the rim around the cap is continuous and not cut into two halves. The other type, which can be found in Ilkhanid and post-Ilkhanid *Shāhnāmas* of the first half of the fourteenth century, agrees closely with the flat cap as shown in the Catalan Atlas. The headgear of the Turkish prince looks rather like a Turkmen cap as illustrated on miniatures during the reigns of the Aq Qoyunlu and the Qarā Qoyunlu.[35]

Cushions in the form of two rolls appear in late Ilkhanid illustrations of the *Shāhnāma*.[36] Falcons or birds of prey often sit on the arm of a rider and are well known from Sasanian hunting scenes, but also from portraits of Turkic princes.[37] In the two portolan charts, the mace is not typical for Islamic princely images. Scepters, weapons, and other insignia of power are more often seen in the hands of viziers and warriors than in those of presiding and feasting princes. Scepters with lilies do not appear at all in Islamic portraits of princes, but lilies are not altogether absent from such portraits. They can be found on blankets covering the throne of Ilkhanid rulers, in particular before they converted to Islam. The mace of the Turkish prince on the Catalan Atlas is a double exception. It differs from the fleur-de-lys scepters of the other Muslim rulers represented on the atlas. Moreover, it even can be found on a few Islamic miniatures of Turkmen and Timurid origin. In its form and position it looks related to a scepter held by a sitting Sogdian nobleman in a mural painting of Pandjikent.[38]

The individual elements of the seated rulers in Western Asia on the Catalan Atlas combine mostly Selčuq and Ilkhanid styles. However, the seated figure of a ruler sitting on a pedestal or a cushion, confronting the viewer head on, appears much earlier in Islamic art. Coins and silver plates from the ninth and tenth centuries show

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for high fur caps. Ettinghausen et al. 2001: 261, pl. 434. *Islamic Art* 3 1988–89: pl. III, D.

[35] Boston, Museum of Fine Arts, N° 30.105, New York, Metropolitan Museum 34.24.1, 57.51.33.

[36] Pope and Ackerman 1938–39, vol. 9: pls. 511–554; 812–980: 837, 838.

[37] Pope and Ackerman 1938–39, vol. 12: pls. 981–1482: 1301C.

[38] Azarpay 1981: 111, fig. 48, pl. 29.

Abbasid caliphs, Buyid emirs, and Ghaznavid sultans in postures and poses like the ones found on the Catalan Atlas, though their crowns, dress, and headgear differ substantially in type and style. These early Islamic images of rulers provide us with traces of the pre-Islamic background of the Islamic iconography of princes. Sasanian winged crowns and seated male participants at Sogdian banquets are two major starting points for the later Islamic representations.[39] From there, links run to Buddhist art in Central Asia and tribal art of western Iranian settlers alongside the Don.[40] The Sasanian winged crown was used from the ninth to the eleventh century in Iran and Afghanistan for marking the figure of a ruler.[41] In the second half of the eleventh century, the Selčuqs brought their own trident and softly curved crown, which ultimately seems to go back to ancient Turkic trident headgear found in Siberian tombs. The iconography of seated men on Fatimid dishes and ivory works, although more easily accessible to mapmakers in Italy and at Mallorca, apparently was not the source of inspiration for the author of the Catalan Atlas since he uses half profiles and floating garments. Moreover, male figures on Fatimid objects of art wear much less hair than the princes on the Catalan Atlas. But the portraits of physicians, merchants, travelers, philosophers, and musicians though found in scientific manuscripts and in al-Ḥarīrī's *Maqāmāt* of the thirteenth century produced in Baghdad, Mosul, and possibly other towns of Iraq do seem to have provided points of departure for the author of the Catalan Atlas, whose work echoes the wide sleeves of their long garments, the circular cut of the garment around the neck, and the large pieces of cloth worn atop them. Even the tones of red and green used in some miniatures resemble those of the *Rey del Tauris* and *Jani-beg*.[42]

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[39] Azarpay 1981: 111, fig. 48, pl. 29. Pope and Ackerman 1938–39, vol. 7, pls. 1–257: 208A (Sasanian); 214 (Post-Sasanian); 218 (Post-Sasanian). Pope and Ackerman 1938–39, vol. 12, pls. 981–1482: 1480a (Post-Sasanian), 1480b (Post-Sasanian).

[40] *Das Altertum* 35.2 1989, frontispiece. The image shows a ruler and priest in the center of a golden necklace found in a tomb of a Sarmatian noblewoman (second half of the first century to first half of the second century).

[41] Shepherd 1974: 81, pls. 3–4, two silver plates with rulers wearing winged crowns, ninth century, Abbasid Iran; pl. 7, silver-gilt bowl, Afghanistan, tenth-eleventh century, Ghaznawid period (?).

[42] Ettinghausen 1962: 45, 77, 79, 114.

The probable Iranian or Central Asian origin of most of the pictorial material from which the author of the Catalan Atlas drew his inspiration is confirmed by the crowned high hat of the king in the Land of Gog and Magog and the baldachin held high over his head by his servants (color fig. 10.7).[43] The crown around the hat is, however, not identical to the five-pointed crown of Ilkhanid and post-Ilkhanid miniatures. It is, rather, the one and only crown used by the illustrator of the Catalan Atlas—a trident crown, the points of which resemble the leaves of the lime-tree. An image of Frederic II (1194–1259), king of Sicily, shows a distinct similarity to the preferred crown of the Catalan Atlas.[44] This image, painted between 1258 and 1266, is contained in the frontispiece to a book on hunting birds preserved in the Vatican Library. At the same time, the image of the seated king documents the profound iconographic differences between this portrait of Frederic II and those of the various Muslim rulers in Western Asia on the Catalan Atlas.

Dulcert obviously had good access to specific and reliable information about the political powers in Western Asia. He also had access to basic information about how a ruler was represented in those cultures in terms of dress, sitting posture, the furniture on which he sat, and hunting animals. The author of the Catalan Atlas was much less well informed about the local political circumstances of his day, and seems to have cared even less. Yet his capacity to differentiate in cultural terms was much more sophisticated than Duclert's had been before him. The author of the atlas obviously had access to a broader array of visual models, which he also knew or dared to identify with specific territories. As a result, the cultural specificity of space in the Catalan Atlas is superior to that in Dulcert's chart. Since Dulcert's portrait of *Uzbeg* Khān shows specific local elements combined with Greek or Italian motifs such as the prince's headgear and the beard, his representation of political space in Western Asia can be viewed as an instance of forming images from different, discrete pieces of knowledge. In contrast, the images of West Asian rulers in the Catalan Atlas, reflecting an attempt at local cultural specificity, more clearly represent a transfer of established iconographic models of rulers. Hence they can be seen as instances

[43] Pope and Ackerman 1938–39, vol. 5: pl. 830A, Siyāwush taken in battle by Afrāsiyāb.

[44] *Staunen der Welt* 1995: frontispiece and p. 83, entry 107.

of transmitted visual knowledge. With their combination of elements from different types of "sitters" (rulers and scholars), they highlight the mapmaker's artistic creativity as well as his limited familiarity with—and understanding of—iconographic codes and styles used in the available array of sources.

Conclusion

A detailed comparison of the images of rivers, rulers, and riding animals in the Western Asian portions of Dulcert's 1339 portolan chart and the 1375 Catalan Atlas with maps and other objects from different Asian cultures leaves no doubt that the portolan chart makers had at their disposal a rich repertoire of cartographic and iconographic motifs. Combining these motifs, they created a complex tapestry of the geography and history of the known world. In doing so, they achieved a representation that came much closer to the realities of nature and society in Western Asia during the fourteenth century than that shown on older Latin world maps.

Two major processes can be discerned: (1) a process of visualizing written, calculated, and perhaps oral knowledge, and (2) a process of transmitting, adapting, and reshaping visual knowledge. The first process applied mostly to physical space, while the second covered political and religious spaces. Both processes were part of mapmaking practices that favored a patchwork style over a systematic approach. This patchwork style allowed the merging of components of diverse origins, including major pieces of concrete as well as abstract knowledge of Asian provenance.

The emergence of a professional group of portolan chart makers contributed to forming a new aesthetic model of visual knowledge that was taken up by Catalan and other mapmakers who worked within that model for almost 150 years. Although written, calculated, and visual elements of Asian provenance were a constitutive component of this model, several elements preserved their Asian background only as a formality, while others remained largely unchallenged.

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CONCLUSION

Philippe Forêt and Andreas Kaplony

The comprehensive history of how visual materials and concepts changed while they crossed Eurasia remains an ambitious task. With this volume we hope to contribute to the study of the journey that maps and images took along the Silk Road. Indeed, our contributors have surveyed a new field of research that should stimulate further discussion.

Methodological Issues

The conceptual tools with which scholars are analyzing visual representations are often inappropriate for probing the depth and wealth of non-Western cultures. We tend to examine foreign images intuitively, even when we are well equipped to read foreign texts with a critical eye. We let ourselves be seduced by images that seem similar to our own; conversely, we distance ourselves from those that look alien. For instance, although the emphasis of premodern Arabic illustrative maps is on relations between elements, we continue to believe that they are less reliable and informative than the maps made in modern Europe and America (Kaplony).

We run the risk of misreading the Silk Road traditions if we neglect the cultures that exported the items that local artists later accepted, adapted, or rejected. A Buddhist interpretation of landscape provides a good example of the significance of tradition: on the realistic map of Mount Wutai in Mogao Cave 61 at Dunhuang, we can see the different spiritual meanings that were visible in the foreground, middle ground, and background of the painting to pilgrims who viewed it centuries ago (Heller). Yet we are hard pressed to propose a contextual appraisal of the visual traditions that were once very influential but are now barely known because most items that have survived have lost their context. The Buddhist tradition of India must, for example, be reconstructed from its impact on China (Wong). Likewise, ancient Greek gridded plans must be reconstructed

from literary allusions (Bloom). Likewise, we lack the evidence needed to bridge the gap between Greek and Arabic horoscope diagrams from the fourth to tenth centuries (Thomann).

The original context of Silk Road iconography obviously has little in common with today's context, whether these images are displayed *in situ* or in museums, seen by the wider public or examined by scholars. Groups of faithful pilgrims engaged with Buddhist murals in ways that remain beyond our own analysis and methods. We can see only pieces of sutras and scrolls that priests could read in their entirety (Heller). We act as though Arabic illustrative maps were independent single sheets and not included in the books they used to be part of (Kaplony). As we make such items more available to the general public, we must remember that Silk Road authors sought communication and not admiration. They found valuable information in reading the instructions in cartouches like those on the Mount Wutai maps (Heller), in the captions in the margins of Arabic maps, and in the references in the geographical texts they illustrated (Kaplony).

The Context of Transmission

The pace of diffusion along the Silk Road depended on the merchants, pilgrims, soldiers, officers, ambassadors, servants, artists, and craftsmen who took images with them when they traveled. Cultural significance and practical considerations determined what these travelers carried and what residents along the way in the marketplaces of the oasis cities selected. Traders from India spread visual concepts of Buddhist cosmography as they brought to China painted silk cloths, statues, and models. Once in China, these concepts became manifest in temples, statues, and murals that displayed the support granted by the local political elite (Heller). Rulers, however, did not control the diffusion of the images whose reproduction they patronized.

Administrative supplies moved easily on the Silk Road because they were intimately connected to the exercise of political power. Muslim bureaucracy turned to paper for writing after it gained control of the Central Asian paper factories in the eighth century, yet paper began to be widely used for graphical notations only much later, in the thirteenth century (Bloom).

The situation on the Silk Road changed when the Mongol khans reorganized travel conditions and transportation patterns. East Asian symbols of power spread quickly westward as Mongol power reached its climax. Chinese art penetrated Armenian iconography faster than Muslim art did because the Armenian vassal state had intense exchanges with its Mongol overlords. Armenian or Mongol ambassadors, or perhaps Italian traders, brought the fabulous animals of China to the Armenian court: lions protected Christ in their previous Buddhist role as guardians of sacred images, dragons represented the successful ruler, and dragon and phoenix personified the imperial couple (Kouymjian).

The emergence of gridded maps (Bloom) and square horoscopes (Thomann) further exemplifies the sudden fracture that separated the old visual codes from the Mediterranean from the new ones from China. Visual elements of Asian origin moved to Europe in unknown circumstances. In fourteenth-century portolan maps, the imagery of Turkish rulers may have been copied from the Byzantine or Asian items that Catalan and Genoese travelers had brought home. Such images were not pivotal in portolan maps. In their patchwork style, European mapmakers featured exotic elements in a non-Asian visual context (Brentjes). This recontextualization differed, therefore, from what we have just said about Buddhist cosmology in China and the East Asian symbols of power in Armenia and the Islamic world.

The Process of Transmission

Concepts did not move from one language to the next without being altered. To discuss the journey of maps and images, "transmission" has been a helpful notion because it has compelled us to identify similar, or almost similar, features in maps and images. Innovations came with the adoption of foreign concepts, which could result in imitation, inspiration, or even total innovation. Silk Road artists selected new visual tools and adapted them to their home environments, according both to their needs and to their familiarity with the original concepts (Bloom).

Adaptation is a richly illustrated theme in our sources. Buddhist models may have inspired the verticality of Han-dynasty pagodas (Zufferey). Chinese artists customized Indian iconography when they placed bodhisattvas in niches with *que* gates that suggested palaces.

The influential Buddhist cosmology encouraged Chinese artists to seek new methods of visual representation. They developed an indigenous planar style to depict "mixed lands." They also made use of Buddhist symmetry and frontality to represent pure lands with a convergent multiple-point perspective (Wong). The Mongol expansion brought to Armenian artists a similar change, from previous flatness to the relief of Chinese landscape scenes (Kouymjian). Chinese cartographers employed gridded plans to evaluate distances and areas, and to delineate space for comments, whereas Islamic architects took graticules as guidelines for building construction and cost calculations (Bloom). The square diagrams from Central Asia that determined auspicious days became the Islamic and European horoscopes (Thomann). From such instances, we conclude that the cultures of the Silk Road often used the same tools in different ways (Bloom).

Often playful, the adoption of new concepts also implied misunderstandings and approximations. For instance, the scale bar on the Arabic world map in the *Book of Curiosities* now at the Bodleian Library claimed a degree of accuracy that highly stylized coastlines did not confirm (Rapoport; Bloom). The first square horoscopes in the Muslim world hesitated between a rhomboid division, a standard division, and both; only with time did the standard division become the norm. The ancient circle horoscopes that in theory depicted the heavens were introduced much later (Thomann).

Transmission through Image, and Transmission through Text

Silk Road travelers had two methods to transmit images: either they copied an original image (direct transmission) or they translated the original image into a text, copied the text, and at the end of the journey translated the text back into an image (text-mediated transmission).

The first method would have had many advantages if images had traveled easily. Because they did not, artists memorized the originals, made drafts, and eventually took notes. How well they remembered the first image was a key consideration. Local artists reconstructed later images from drafts or notes without having seen the model. Let's look again at al-Kāshgharī's dictionary, where the making of a single copy altered the map and the text in different ways. Images

were cut down into predefined elements to standardize the work and minimize mistakes—a method similar to text encoding (Kaplony). Aesthetic considerations may also have influenced stylistic conventions (Rapoport). The point is that the rules followed for image-copying and text-copying were different (Bloom).

Text-mediated transmission provided a secure way to convey information. Translating from image to text and from text to image were nonetheless delicate operations that often resulted in errors. For instance, Indian artists granted parallel tusks on each side to their six-tusked elephants, whereas Chinese artists kept parallel only two of the three tusks on each side (Zufferey). At the beginning of the eighth century, Arabic craftsmen erroneously copied the outer surface of a celestial globe onto the inner vault of a palace (Kunitzsch). Other mistakes made when turning textual data into a map are found in the Arabic *Book of Curiosities*: the Indus-Ganges itineraries are exact but the mapping of the river system is defective; several itineraries are upside-down on the world map because the sheet of one half of the Indian Ocean was wrongly connected to the other one (Rapoport).

For centuries, mapmakers preferred to transmit spatial information through texts, as Ptolemy (90–168 CE) did. His safe methodology to locate eight thousand places explains the long-lasting influence of his *Guide to Geography*. From Ptolemy's tables, generations of cartographers reconstructed world maps. Arabic geographers combined textual and visual information for maximal accuracy. The description of precise Arabic maps is another case of texts acting as support for map data (Kaplony). Catalan portolan charts thus display physical elements of Western Asia that match Arabic textual sources, even if the resulting maps look different from Arabic maps (Brentjes).

Conclusion

In this volume, we wanted to provide both a thematic and regional overview of the Silk Road that would encourage disciplinary border crossings. Geographical perspectives are deployed in this book, from landscape representation and spatial perception to the historical interactions of societies with their environments. *The Journey of Maps and Images on the Silk Road* should therefore be read as an introduction to more detailed essays on Silk Road topics.

APPENDIX

LIST OF GEOGRAPHICAL NOMENCLATURE IN AL-KĀSHGHARĪ'S TEXT AND MAP

Andreas Kaplony

The earliest map known of the Silk Road does not come from a book of geography, but is embedded in an eleventh-century dictionary of the Turkish languages, al-Kāshgharī's *Compendium of the Languages of the Turks* (*Dīwān lughāt al-Turk*). Although all of its names and terms have been commented upon,[1] so far, scholars have never used the wealth of spatial data that the 600 pages dictionary contains. Our appendix opens, for the first time, a detailed perspective on the entire Silk Road.

Geographical names belong to three categories: to reference names (see parts A and B below), plain names (see parts C and D), and famous names (see parts E–G); see Kaplony, Chapter 7. They are found in a number of contexts:

(1) The introduction (1,1–28,17, abbreviated "Intr.") includes general remarks (1,1–20,6), three lists on tribes (20,7–21,6), languages (24,1–25,15) and differences of languages (25,16–28,17), as well as the map (22–23) with its main part and the map table.

(2) The dictionary part (29,1–638,4, Dict.) either explains a name in its own entry or uses it as reference in another entry.

(3) The conclusion (638,5–17) has no names.

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[1] C. Brockelmann, *Mitteltürkischer Wortschatz nach al-Kāshgarīs Dīvān lugāt at-Turk. Bibliotheca Orientalis Hungarica* 1 (Ofenpest and Leipzig: Körösi Csoma-Gesellschaft,1928), 240–252; Károly Czeglédy, "Kāšġarī földrajzi neveihez" [On Kāshgharī's Geographical Names], in *Tanulmányok a magyar nyelv életrajza köréből: Bárczi Géza születésének 70. évfordulója alkalmából írták tisztelői, barátai, tanítványai*, ed. Loránd Benkő, *Nyelvtudományi Értekezések* 40 (Budapest: Akadémiai Kiadó, 1963); and Robert Dankoff and James Kelly, trans., *Maḥmūd al-Kāshgarī: Compendium of the Turkic Dialects (Dīwān Luγāt at-Turk), Sources of Oriental Languages and Literatures* vol. 7, *Turkish Sources* vol. 7 (Cambridge, MA: Harvard University Printing Office, 1982–85), vol. 3: 238–244.

(4) A choice of reference names (Ref.names) is used throughout the book.

In the following list, abbreviations used are: ab. abode; c. city; d. desert; f. fortress; fd. ford; l. lake; lang. language; ld. land; m. mountain; mp. mountain pass; p. people; pl. place; r. river; s. sea; sp. summer pastures; st. steppe; tr. tribe; v. village; wp. winter pastures. The spelling of names has been made uniform both in the following list and on color fig. 7.2,[2] and the Arabic article, inconsistently used by al-Kāshgharī, has been left out.

A. *Reference Names Fully Transmitted from Original Map Found in Map, Mostly also in Text of Introduction and/or in Dictionary*

S. of **Ābisgūn** (Caspian S.): Intr./Map: *S. of Ābisgūn*; Dict./Other Entry: *Frontiers of Ld. of Türk reach from Özkänd until Ṣīn and from Rūm until Ṣīn, round S. of Ābisgūn* 510,6–8.—r. **Ärtish**: Intr./Text: *p. on r.s Ila, Ärtish, Yamār, Ätil as far as Ld. of Uyghur, a lang. group* 25,8f.; Intr./Map: *r. Ärtish* ; Dict./Own Entry: *r. Ärtish, in St.s of Yemäk, flows in a l.* 61,5–7; Dict./Other Entry: *r. Ärtish* 88,16; 89,1; 163,13.—r. **Ätil** (r. Volga): Intr./Text: *p. on r.s Ila, Ärtish, Yamār, Ätil as far as Ld. of Uyghur, a lang. group* 25,8f.; Intr./Map: *r. Ätil; one of its attribuents* (*shuʿba minhu*);[3] Dict./Own Entry: *r. Ätil, in Ld. of Qifčāq, flows in S. of Bulghār, with attribuent to Rūs* 49,7f.; Ref.name: *Ab.s of Qifčāq, Ab. of Qifčāq and Oghuz; Bulghār; Rūs.*—tr. **Bäčänäk**: Intr./Text: *Bäčänäk, tr. of Türk, near Rūm* 20,15f.; *Bäčänäk, a lang. group, near Rūm* 25,6; Intr./Map: *Bäčänäk*; Dict./Own Entry: *Bäčänäk, near Rūm* 245,2f.; *Bäčänäk, tr. of Oghuz, in Djand* 245,3; Dict./Other Entry: *Bäčänäk, tr. of Oghuz* 41,1; Ref.name: *Ab. of Qifčāq and Oghuz; Djand.*—c. **Balāsāghūn**: Intr./Text: *p. of Balāsāghūn, a lang. group* 25,9f.; *Ld. of Arghu, from Isbīdjāb to Balāsāghūn* 25,11f.; Intr./Map: *Balāsāghūn*; Dict./Other Entry: *c. Balāsāghūn and what is near it from Ld. of Arghu* 43,9f.; *Balāsāghūn = Qūz Ūlūsh* 43,9f.; 623,15; *Quz Ordu = Balāsāghūn* 74,15; f. *Ordu near Balāsāghūn* 74,15f.; *Arghu, ld. from Ṭarāz to Balāsāghūn* 76,9f.; *M. of Balāsāghūn* 239,3; *Ṣoghdāq, p. in Balāsāghūn, originally from Ṣoghd between Bukhārā and Samarqand* 237,6f.; *pl. Baqirliq near Balāsāghūn* 248,2f.; *sp. Yün Ariq near Balāsāghūn* 507,5; *f. Shū near Balāsāghūn* 623,2f.; *Zānbi Mp., between Qočñār Bāshi and Balāsāghūn* 634,11.—r. **Banākat** (r. Syr Darya): Intr./Map: *Sayḥūn*; Dict./Other Entry: *Ögüz R., the name Oghuz use for r. Banākat, Ld. of Oghuz is*

[2] For the spelling of names, we follow Dankoff and Kelly 1982–85, 3: 238–244.

[3] *Shuʿba minhu* does not refer to the Qifčāq (Omeljan Pritsak, "Kāshgharī's Angaben über die Sprache der Bolgaren," *Zeitschrift der Deutschen Morgenländischen Gesellschaft* 109 [1959]: 102), but to river *Ätil.*

on it, their nomads settle on it and many tributaries of this r. are found in Ld. of Türk 41,10–13.—c. **Barmān**: Intr./Map: *Barmān*; Dict./Other Entry: *r. Yuñu, flows through Barmān* 605,12–14.—c. **Barsghān**: Intr./Map: *Barsghān*; Dict./Own Entry: *Barsghān* 625,11f.; Dict./Other Entry: *a mp. between Uč and Barsghān* 198,2; *c. Čigil, in Qayās, behind Barsghān* 198,7f.; *Yawghu, c. near Barsghān, and also a mp. nearby* 458,8; *sp. YYZ'VY Tayiz, near Barsghān* 496,16; *Isig L. = L. of Barsghān* 502,11f.; *Qara Shāñir, pl. in Barsghān* 543,6f.; *p. of Barsghān* 551,3f.—tr. **Basmil**: Intr./Text: *Basmil, tr. of Türk* 20,16; *Basmil, a lang. group* 25,2; Intr./Map: *St.s of Basmil*; Dict./Own Entry: *Basmil* 242,3f.—tr. **Bashghirt**: Intr./Text: *Bashghirt, tr. of Türk* 20,16; *Bashghirt, a lang. group* 25,5; Intr./Map: *St.s of Bashghirt.*—c. **Bēsh Baliq** "Five c.s": Intr./Map: *Bēsh Baliq*; Dict./Own Entry: *Bēsh* Baliq "Five *c.s," largest c. of Uyghur* 190,17–191,1; Dict./Other Entry: *Uyghur, with five c.s* 68,13f.; *Uyghur, with c.s Sulmi, Qočo, Djanbaliq, Bēsh Baliq, Yañi Baliq* 69,10f; Ref.name: *Ld. of Uyghur.*—**Bulghār** (c.; S. of Bulghār = Caspian Sea): Intr./Text: *Bulghār, a lang. group* 25,6; *Čigil = Čigil-Türk and other Türk, vs. a part of Qifčāq, Yemäk, Suvār, Bulghār and others next to Rūs and Rūm* 27,7–12; Intr./Map: *Bulghāri* Dict./Own Entry: *Bulghār, c. of Türk* 229,16f.; Dict./Other Entry: *r. Ätil, in Ld. of Qifčāq, flows in S. of Bulghār, with attribuent to Rūs* 49,7f.; *Sakhsīn = Suvār, c. near Bulghār* 220,2f.; Ref.name: r. *Ätil; one of its attribuents; Ab.s of Qifčāq, Ab. of Qifčāq and Oghuz; Bulghār; Rūs.*—tr. **Čömül**: Intr./Text: *Čömül, tr. of Türk* 21,2; *Čömül, a lang. group* 25,1f.; *Tukhsi, Qifčāq, Yapāqu, Tatār, Qāy, Čömül, Oghuz [vs. Türk]* 27,4–7; Intr./Map: *Ab. of Čömül*; Dict./Own Entry: *Čömül* 199,1.—**Djābarqā** (Japan): Intr./Text: *Djābarqā, a lang. group* 24,7; Intr./Map: *Djābarqā.*—c. **Djanbaliq**: Intr./Map: *Djanbaliq*; Dict./Other Entry: *Uyghur, with five c.s* 68,13f.; *Uyghur, with c.s Sulmi, Qočo, Djanbaliq, Bēsh Baliq, Yañi Baliq* 69,10f.; Ref.name: *Ld. of Uyghur.*—c. **Djand**: Intr./Map: *Djand*; Dict./Other Entry: *Bäčänäk, tr. of Oghuz, in Djand* 245,3.—**Djanūb** "south": Intr./Text: *south and north* 21,4; Intr./Map: *Djanūb "south."*—r. **Djayḥūn** (r. Amu Darya): Intr./Map: r. *Djayḥūn*; Dict./Other Entry: *r. Djayḥūn and r. al-Furāt* 41,10; *r. Ila, where Yaghma, Tukhsi, and a part of Čigil settle, considered Djayḥūn of Ld. of Türk* 58,16f.; *Čigil, the name Oghuz use for all Türk from Djayḥūn until Upper China* 198,14–17.—**Djurčān**: Intr./Map: *Djurčān*; Dict./Own Entry: *Djurčān, Muslim frontier c. on road to Ṣīn* 219,8.—c. **Eki Ögüz**: Intr./Map: *Eki Ögüz*; Dict./Own Entry: *Eki Ögüz, frontier c. between r. Ila and r. Yawinč* 41,13–15; Dict./Other Entry: *Täriñ L., at Frontier of Eki Ögüz* 502,15; *Qamlanču, c. near Eki Ögüz* 552,4; Ref.name: *r. Ila; Yawinč.*—ld. **Farghāna**: Intr./Map: *Özkänd*; Dict./Other Entry: *Aruq Turuq, mp. between Farghāna and Kāshghar* 45,9; *Ala, sp. near Farghāna* 54,1; *Özkänd, capital of Farghāna* 173,11f.; *Aruq Turuq, mp. between Kāshghar and Farghāna* 191,5; *p. in Farghāna and in Ld. of Shiqni* 409,1; *Qara Yalgha, mp. between Farghāna and Ld. of Türk* 458,9; *r. Yapāqu, flows through Özkänd of Farghāna from m.s of Kāshghar* 460,4f.; Ref.name: *Kāshghar.*—ld. **Fāris** (Persia)/p. **Furs** (Persians): Intr./Text: *Fārisī* 24,3; Intr./Map: *Bilād Fāris* "Ld. Persia"; Dict./Other Entry: *Tat = non-Muslim Uyghur* 30,9–11; *Tat = Fārisī, vs. Türk* 176,10f.; *Tat = Fārisī and Tawghāč = Turkī* 228,12–14; *Tat = Fārisī* 244,4f.; 327,2f.; *Tat, their lang. is Fārisī, or lang.*

of Uyghur 370,4f.; *Tat = Furs* 374,16f.; 572,12f.; *Tat, the name most Türk use for Fārisī* 406,14f.; *Tat Tawghāč, name used by Yaghma and Tukhsi for Uyghur Ṣīn* 406,16f.; *Tat = Fārisī, vs. Türk* 407,2–4; *Furs* 511,13; 511,14.—c. **Khotan**: Intr./Text: *Khotan, a lang. group* 24,5; 24,12f.; *p. of Khotan and Känčäk, vs. Türk* 27,15–17; Intr./Map: *Khotan*; Dict./Other Entry: *Udun, c. of Khotan and also its p.* 50,17–51,1; *Säkirmä, c. on road to Khotan* 246,2; *Q̲āsh R., two rivers which flow on both sides of c. Khotan, called Ürüñ Q̲āsh R. and Q̲ara Q̲āsh R.* 511,4–7; *Khotan* 544,14; 609,11.—ld. **Khwārazm**: Intr./Map: *Khwārazm*; Dict./Other Entry: *Küčät, tr. of Türk, have been settled in Khwārazm* 180,2f.—r. **Ila**: Intr./Text: *p. on r.s Ila, Ärtish, Yamār, Ätil as far as Ld. of Uyghur, a lang. group* 25,8f.; Intr./Map: *r. Ila*; Dict./Own Entry: *r. Ila, where Yaghma, Tukhsi, and a part of Čigil settle, considered Djayḥūn of Ld. of Türk* 58,16f.; Dict./Other Entry: *Eki Ögüz, frontier c. between r. Ila and r. Yawinč* 41,13–15; *Āq Teräk, fd. of r. Ila in Yaghma* 53,10f.; *p. of r. Ila, i.e., Yaghma, Tukhsi and Čigil* 205,17; *r. Q̲āz, flows into r. Ila* 510,8f.; *Käygän, two r.s which flow from Q̲ayās to r. Ila, called Kičig Käygän and Ulugh Käygän* 522,1–3; *r. Ila, beyond it are Uyghur and Ld. of Miñlāq* 549,1–3; *Yawinč, c. near r. Ila* 608,5; Ref.name: *Ld. of Uyghur; Yawinč*.—c. **Isbīdjāb**: Intr./Text: *Ld. of Arghu, from Isbīdjāb to Balāsāghūn, a lang. group* 25,11f.; Intr./Map: *Isbīdjāb*; Dict./Other Entry: *Sayram = Saryam = al-Madīna l-Bayḍā' = Isbīdjāb* 522,14.—**Isig** L.: Intr./Map: *l. near Barsghān*; Dict./Own Entry: *Isig L. = L. of Barsghān* 502,11f.—**Kāshghar** (c.; Xinjiang): Intr./Text: *Turkish script, used from Kāshghar to Upper China, in all Ld. of Türk* 8,8–10; *Kāshghar, some of its v.s speak lang. of Känčäk, but c. itself Khāqānī Turkish* 25,12f.; Intr./Map: *Kāshghar*; Dict./Other Entry: *Alush, v. of Kāshghar* 43,4; *Aruq Turuq, mp. between Farghāna and Kāshghar* 45,9; *Q̲izil Wp., in M.s of Kāshghar* 53,2; *Artuč, two v. in Kāshghar* 60,5f.; *Alghuq, v. of Kāshghar* 63,7; *Ordu Känd = Kāshghar* 74,14f.; *Ordu Känd = Kāshghar = Lower China* 173,15–17; *Turigh Art Sp., sp. of Kāshghar* 187,17; *Aruq Turuq, mp. between Kāshghar and Farghāna* 191,5; *Q̲awaq Mp., between Kāshghar and Özkänd* 192,15; *Čigil, some v.s in Kāshghar* 198,17–199,1; *r. Q̲izil, in Kāshghar* 199,5f.; *r. Tämän, flows through Kāshghar* 202,14; *käwči, measure in use from Kāshghar to Uyghur* 210,14; *Barkhān, f. near Kāshghar, with gold mines* 219,9f.; *Ṣīn has three parts, one of the three parts is Lower China = Barkhān = Kāshghar* 228,6–9; *Q̲ifčāq, pl. near Kāshghar* 239,2; *Toqurqa, pl. in sp. of Kāshghar* 245,12; *Baghram St., between Kāshghar and Yārkänd* 243,11; *r. Yapāqu, flows through c. Özkänd of Farghāna from M.s of Kāshghar* 460,4f.; *Tēz = Tarigh Art Sp., sp. of Kāshghar* 496,14f.; *Körüñ, l. at a sp. in M.s of Kāshghar* 502,12f.; *Mān Känd, former c. near Kāshghar* 514,3f; *Körüñ L., near Kāshghar* 606,7; Ref.name: *Özkänd*; [*Khitāy*].—c. **Käshmīr**: Intr./Map: *Käshmīr*; Dict./Own Entry: *Käshmīr, c. in Ld. of Türk* 230,5; Dict./Other Entry: *Tübüt, tr. in Ld. of Türk, further east is Ṣīn, further west Käshmīr, further north Uyghur, further south S. of Hind* 179,2–7.—c. **Kuča**: Intr./Map: *Kuča*; Dict./Other Entry: *Bögür, f. between Kuča and Uyghur, frontier c.* 182,1f.; *Tarim = Usmi Tarim, pl. on Frontier of Uyghur, near Kuča, and also r. flowing through it* 199,17–200,1; *Küsän = Kuča, frontier c. of Uyghur* 204,2f.; *Yul̲duz L., on frontier between Kuča, Kiñüt and Uyghur* 502,13f.; *Bāy Yighāč, pl. near Uč, between Uč and Kuča* 514,5f.; Ref.name: *Ld. of Uyghur*.—c. **Kümi Talās** = Kümi Ṭarāz: Intr./Map: *Kümi*

Ṭarāz; Dict./Own Entry: *Talās = Ṭarāz, two c.s, one called Ulugh Talās, the other one, on Frontier of Islam, Kümi Talās* 184,10f.; Ref.name: *Ṭarāz*.—c. **Küsän**; Intr./Map: *Kuča*; Dict./Own Entry: *Küsän = Kuča, frontier c. of Uyghur* 204,2f.; Ref.name: *Ld. of Uyghur*.—c. **al-Madīna l-Bayḍā**ʾ (c. Isbīdjāb): Intr./Text: *p. of al-Madīna l-Bayḍā', a lang. group* 25,10f.; Intr./Map: *Isbīdjāb*; Dict./Other Entry: *Sayram = Saryam = al-Madīna l-Bayḍā' = Isbīdjāb* 522,14.—pl. **Mān Qishlāgh**: Intr./Map: *Mān Qishlāgh*; Dict./Own Entry: *Mān Qishlāgh, in Ld. of Oghuz* 514,3; *Mān Qishlāgh, pl. in Ld. of Oghuz* 234,6; Ref. name: *Ab. of Qifčāq and Oghuz, Ld. of Oghuz*.—**Māṣīn** (northern China): Intr./Text: *Tawghāč = Māṣīn, tr. of Türk* 21,3; *Māṣīn, a lang. group* 24,8f.; *sea near Māṣīn* 24,11; *main part of Ld. of Türk reaches from Rūm as far as Māṣīn* 25,13f.; Intr./Map: *Māṣīn, Kāshghar*; Dict./Other Entry: *Tawghāč, i.e, Māṣīn, 4 months behind Ṣīn* 228,6f.; *Ṣīn has three parts, one of the three parts is Upper China = Tawghāč = Māṣīn* 228,6–9; *Tawghāč = Māṣīn* 597,17; [*Khitāy*].—**Nasnās** "Wild Man": Intr./Map: *d.s, where Nasnās "Wild Man"" is said to live; pl.s of Wuḥūsh "Wild Men"*; Dict./Other Entry: *käylik "wild" (nasnās), somebody who walks like a mad (madkhūsh) or a wild (waḥshī) man* 522,7f.—tr. **Oghuz**: Intr./Text: *Türkmän-Oghuz-Čigil* 3,4; *Oghuz-Türkmän* 20,12; *Oghuz, tr. of Türk* 20,16; *Oghuz, a lang. group* 25,3; 25,7; *Oghuz and Qifčāq, vs. Türk* 26,1–6; 28,6–13; *Oghuz, Qifčāq, Suvārīn, vs. Türk* 26,9–12; *Oghuz = Turkmān-Oghuz and others, vs. Türk, genuine Türk (ṣamīm al-Turk)* 26,12–17; *Oghuz and others, vs. genuine Türk (ṣamīm al-Turk)* 26,17–27,4; *Tukhsi, Qifčāq, Yapāqu, Tatār, Qāy, Čömül, Oghuz [vs. Türk]* 27,4–7; *Čigil vs. Yaghma, Tukhsi, Oghuz, a part of Arghu next to Ṣīn, vs. Qifčāq and others next to Rūm* 27,12–14; *Oghuz vs. Türk* 28,2–4; Intr./Map: *Ab. of Qifčāq and Oghuz, Ld. of Oghuz*; Dict./Own Entry: *Oghuz = Türkmän*, with a long list of all tr.s 40,4–41,10; Dict./Other Entry: *Ögüz, the name Oghuz use for r. Banākat, Ld. of Oghuz is on it, nomads of Oghuz settle on it and many tributaries of this r. are found in Ld. of Türk* 41,10–13; *Sabrān, c. in Ld. of Oghuz* 219,13f.; *Sitkün, c. of Ld. of Oghuz* 222,14; *Mān Qishlāgh, pl. in Ld. of Oghuz* 234,6; *Sughnāq, c. of Ld. of Oghuz* 237,10; *Qarluq, tr. of Türk, not Oghuz, but Türkmän* 238,7f.; *Qarnāq, c. of Ld. of Oghuz* 238,8; *Bäčänäk, tr. of Oghuz, in Djand* 245,3; *Mān Qishlāgh, in Ld. of Oghuz* 514,3; *Türkmän = Oghuz* 622,6–625,3; Ref.name: [*Qarluq*].—**Ögüz** (r. Syr Darya): Intr./Map: *Sayḥūn*; Dict./Own Entry*: r. Djayḥūn and r. al-Furāt* 41,10; *Ögüz, the name Oghuz use for r. Banākat, Ld. of Oghuz is on it, nomads of Oghuz settle on it and many tributaries of this r. are found in Ld. of Türk* 41,10–13.—**Ordu Känd** (c. Kāshghar; Xinjiang): Intr./Map: *Kāshghar*; Dict./Own Entry: *Ordu Känd = Kāshghar* 74,14f.; *Ordu Känd = Kāshghar = Lower China* 173,15–17.—pl. **Ötükän**: Intr./Map: *Ötükän*; Dict./Own Entry: *Ötükän, pl. in St. of Tatār, near Uyghur* 81,9f.; Ref. name: *St. of Tatār, Ld. of Uyghur*. –c. **Özkänd**: Intr./Map: *Özkänd*; Dict./Other Entry: *Adhgish, tr. of Türk, in Özkänd* 61,5; *Özkänd, capital of Farghāna* 173,11f.; *r. Yapāqu, flows through Özkänd of Farghāna from M.s of Kāshghar* 460,4f.; *Frontiers of Ld. of Türk reach from Özkänd until Ṣīn and from Rūm until Ṣīn, round S. of Ābisgūn* 510,6–8; Ref.name: *S. of Ābisgūn*.—**Qaračuq** (c. al-Fārāb; m.): Intr./Map: *M. Qaračuq*; Dict./Own Entry: *Qaračuq = al-Fārāb, c. of Ld. of Oghuz* 244,15f.; Ref.name: *M. Qaračuq*.—**Qara Qāsh** R.: Intr./

Map: *one of the two r.s near Khotan*; Dict./Own Entry: *Qāsh R., two r.s which flow on both sides of c. Khotan, called Ürüñ Qāsh R. and Qara Qāsh R.* 511,4–7.—**Qāsh** R. (two r.s): Intr./Map: *the two r.s near Khotan*; Dict./Own Entry: *Qāsh R., two r.s which flow on both sides of c. Khotan, called Ürüñ Qāsh R. and Qara Qāsh* R. 511,4–7.—c. **Qātūn Sīnī**: Intr./Map: *Khātūn Sīnī*; Dict./Own Entry: *Qātūn Sīnī, c. between Tañut and Ṣīn* 504,5; Dict./Other Entry: *Qātūn Sīnī, c. between Tañut and Ṣīn* 586,17–587,3; *Qātūn Sīnī and Tañut* 587,16–588,2; Ref. name: [*Tañut; Khitāy*].—tr. **Qāy**: Intr./Text: *Qāy, tr. of Türk* 20,17; *Qāy, a lang. group* 25,2; *Tukhsi, Qifčāq, Yapāqu, Tatār, Qāy, Čömül, Oghuz [vs. Türk]* 27,4–7; Intr./Map: *Ab. of Qāy*; Dict./Own Entry: *Qāy* 514,9f.—**Qifčāq** (tr., pl.): Intr./Text: *Qifčāq, tr. of Türk* 20,16; *Qifčāq, a lang. group* 25,3; *Oghuz and Qifčāq, vs. Türk* 26,1–6; *Oghuz, Qifčāq, Suvārīn. vs. Türk* 26,9–12; *Tukhsi, Qifčāq, Yapāqu, Tatār, Qāy, Čömül, Oghuz [vs. Türk]* 27,4–7; *Čigil = Čigil-Türk and other Türk, vs. a part of Qifčāq, Yemäk, Suvār, Bulghār and others next to Rūs and Rūm* 27,7–12; *Čigil vs. Yaghma, Tukhsi, Oghuz, a part of Arghu next to Ṣīn, vs. Qifčāq and others next to Rūm* 27,12–14; *Oghuz, Qifčāq, vs. Türk* 28,6–13; Intr./Map: *Ab.s of Qifčāq, Ab. of Qifčāq and Oghuz;*[4] Dict./Own Entry: *tr. Qifčāq* 239,2; *Qifčāq, pl. near Kāshghar* 239,2; Dict./Other Entry: *r. Ätil, in Ld. of Qifčāq, flows in S. of Bulghār, with attribuent to Rūs* 49,7f.; *Yamāk, tr. of Qifčāq* 163,14; *Bulaq = Älqä Bulaq, for a while enslaved by Qifčāq* 191,2f.; *Känčäk Shäñir, c. near Ṭarāz, frontier c. of Qifdjāk* 241,14; *Yemäk, considered Qifčāq by al-Kāshgharī, but Qifčāq consider them different from themselves* 456,15f.; Ref.name: *Kāshghar.* –c. **Qočñār Bāshi**: Intr./Map: *Qočñār Bāshi*; Dict./Own Entry: *c. Qočñār Bāshi* 611,5; Dict./Other Entry: *Sidiñ L., near Qočñār Bāshi* 502,13; 605,15f.; *Ẕānbi Mp., between Qočñār Bāshi and Balāsāghūn* 634,11.—**Qočo** (c.; ld.) Intr./Map: *Qočo*; Dict./Own Entry: *Qočo, c. in Uyghur, and ld. there* 541,12f.; *Qočo = Ld. of Uyghur* 550,3; Dict./Other Entry: *Uyghur, with five c.s* 68,13f.; *Uyghur, with c.s Sulmi, Qočo, Djanbaliq, Bēsh Baliq, Yañi Baliq* 69,10f.; Ref.name: *Ld. of Uyghur.*—**Quz Ordu** = **Qūz Ūlūsh** (c. Balāsāghūn): Intr./Map: *Balāsāghūn*; Dict./Own Entry: *Balāsāghūn = Qūz Ūlūsh* 43,9f.; *Quz Ordu = Balāsāghūn* 74,15.—p. **Rūs**: Intr./Text: *Čigil = Čigil-Türk and other Türk, vs. a part of Qifčāq, Yemäk, Suvār, Bulghār and others next to Rūs and Rūm* 27,7–12; Intr./Map: *Rūs*; Dict./Other Entry: *r. Ätil, in Ld. of Qifčāq, flows in S. of Bulghār, with attribuent to Rūs* 49,7f.; Ref.name: *r. Ätil; one of its attribuents; Ab.s of Qifčāq, Ab. of Qifčāq and Oghuz; Bulghār.*—m. **Sadd D̲ī l-Qarnayn** "Wall of Alexander the Great": Intr./Text: *p. of Gog and Magog, with a wall* 24,10; Intr./Map: *Sadd D̲ī l-Qarnayn* "*Wall of Alexander the Great";* Ref.name: *Ld. of Gog and Magog.*—c. **Samarqand**: Intr./Map: *Samarqand*; Dict./Own Entry: *Sämiz Känd, called in Persian Samarqand* 173,12f.; *Baykänd, near Samarqand* 509,16; *Samarqand = Sämiz Känd* 510,2f.; Dict./Other Entry: *Ṣoghdāq, p. in Balāsāghūn, originally from Ṣoghd between Bukhārā and Samarqand* 237,6f.—**Sämiz Känd** (c. Samarqand): Intr./

[4] Gerhard Doerfer, "Maḥmūd al-Kāshgarī, Argu, Chaladsch," *Ural-Altaische Jahrbücher*, n.s., 7 (1987): 106 n.1, assumes that the two references to Qifčāq on the map mirror al-Kāshgharī's use of the term for two different language groups, i.e., for Qipčāq per se and for a group of Bulghār.

Map: *Samarqand*; Dict./Own Entry: *Sämiz Känd, called in Persian Samarqand* 173,12f.; Dict./Other Entry: *Samarqand = Sämiz Känd* 510,2f.—**Saryam** = Sayram (c. Isbīdjāb): Intr./Map: *Isbīdjāb*; Dict./Own Entry: *Sayram = Saryam = al-Madīna l-Bayḍā' = Isbīdjāb* 522,14.—c. **Shāndju**: Intr./Map: *Shāndju*; Dict./Own Entry: *Shāndju, c. on road [from Barsghān] to Upper China* 210,11f.; Ref.name: *Barsghān*.—**Shāsh** (c. Tashkent): Intr./Map: *Shāsh*; Dict./Other Entry: c. *Tashkän = Shāsh, originally Tāsh Känd "c. of stone"* 222,11f.; *Tashkänd = Shāsh* 510,3.—**Shimāl** "north": Intr./Text: *south and north* 21,4; Intr./Map: *Shimāl "north"*; Ref.name: *Varañ*; [*Rūm*]; Dict./Other Entry: *Varañ, pl. near Rūm, northern Ld. near Rūm* 80,1f.—**al-Ṣīn al-A'lā** "Upper China" (northern China): Intr./Text: *Turkish script, used from Kāshghar to Upper China, in all Ld. of Türk* 8,8–10; Intr./Map: *Māṣīn*; Ref.name: *Shāndju; Kāshghar*; [*Khitāy*]; Dict./Other Entry: *Čigil, the name Oghuz use for all Türk from Djayḥūn until Upper China* 198,14–17; *Shāndju, c. on road to Upper China* 210,11f.; *Ṣīn has three parts, one of the three parts is Upper China = Tawghāč = Māṣīn, 4 months behind Ṣīn* 228,6–9; *Khitāy = Upper China* 550,7.—**al-Ṣīn al-Suflā** "Lower China" (Xinjiang): Intr./Map: *Kāshghar*; Ref.name: *Māṣīn*; [*Khitāy*]; Dict./Other Entry: *Ordu Känd = Kāshghar = Lower China* 173,15–17; *Barkhān = Lower China* 219,9; *Ṣīn has three parts, one of the three parts is Lower China = Barkhān = Kāshghar* 228,6–9; *Tawghāč = Māṣīn* 597,17.—c. **Sulmi**: Intr./Map: *Sulmi*; Dict./Other Entry: *Uyghur, with five c.s* 68,13f.; *Uyghur, with c.s Sulmi, Qočo, Djanbaliq, Bēsh Baliq, Yañi Baliq* 69,10f.; Ref.name: *Ld. of Uyghur.*—c. **Suvār**/p. **Suvārīn**: Intr./Text: *Suvār, a lang. group* 25,6; *Oghuz, Qifčāq, Suvārīn, vs. Türk* 26,9–12; *Čigil = Čigil-Türk and other Türk, vs. a part of Qifčāq, Yemäk, Suvār, Bulghār and others next to Rūs and Rūm* 27,7–12; Intr./Map: *Suvār*; Dict./Own Entry: *Sakhsīn = Suvār, c. near Bulghār* 220,2f.; Ref.name: *Bulghār.*—**Talas** (two c.s): Intr./Map: Ṭarāz; *Kümi Ṭarāz*; Dict./Own Entry: *Talās = Ṭarāz, two c.s, one called Ulugh Talās, the other one, on Frontier of Islam, Kümi Talās* 184,10f.—**Tarim** (pl.; r.): Intr./Map: *r. near Kuča*; Dict./Own Entry: *Tarim = Usmi Tarim, pl. on Frontier of Uyghur, near Kuča, and also r. flowing through it* 199,17–200,1; Ref.name: *Ld. of Uyghur.*—c. **Tashkänd**: Intr./Map: *Shāsh*; Dict./Own Entry: *c. Tashkän = Shāsh, originally Tāsh Känd "c. of stone"* 222,11f.; *Tashkänd = Shāsh* 510,3.—c. **Ṭarāz** (two c.s): Intr./Text: *p. of Ṭarāz, a lang. group* 25,10; Intr./Map: *Ṭarāz*; Dict./Other Entry: *Utluq, c. near Ṭarāz* 62,1; *Talās = Ṭarāz, two c.s, one called Ulugh Talās, the other one, on Frontier of Islam, Kümi Talās* 184,10f.; *Arghu, ld. from Ṭarāz to Balāsāghūn* 76,9f.; *Čigil, c. near Ṭarāz, in Ld. of Arghu* 198,9–199,2; *Känčäk Shäñir, c. near Ṭarāz, frontier c. of Qifčāq* 241,14; *Qarghaligh, f. near Ṭarāz* 263,2; *Yaghma, v. near Ṭarāz* 459,5.—tr. **Tatār**: Intr./Text: *Tatār, tr. of Türk* 20,17; *Tatār, a lang. group* 25,2; *Tukhsi, Qifčāq, Yapāqu, Tatār, Qāy, Čömül, Oghuz [vs. Türk]* 27,4–7; Intr./Map: *St.s of Tatār*; Dict./Own Entry: *Tatār* 207,6f; Dict./Other Entry: *Ötükän, pl. in St.s of Tatār, near Uyghur* 81,9f.—**Tawghāč** (northern China; tr.): Intr./Text: *Tawghāč = Māṣīn, tr. of Türk* 21,3; Intr./Map: *Māṣīn*; Dict./Own Entry: *Tawghāč khānnig = khāqān Ṣīn "the emperor of China"* 215,3f.; *Ṣīn has three parts, one of the three parts is Upper China = Tawghāč = Māṣīn, 4 months behind Ṣīn* 228,6–9; *Tawghāč, tr. of Türk in Tawghāč, called Tat Tawghāč = Uyghur*

Ṣīn 228,9f.; *Tawghāč äḏi* "*a Tawghāč thing,*" *an ancient and imposing manufactured item, like Arabic shay' 'ādī* "*a 'Ād thing*" 228,10f.; *Tat Tawghāč, name used by Yaghma and Tukhsi for Uyghur Ṣīn* 406,16f.; Ref.name: *Ld. of Uyghur*; [*Khitāy*].—**Tawushghān** R.: Intr./Map: *r. near Uč*; Dict./Own Entry: *Tawushghān R., flows through c. Uč* 256,4f.—c. **Türk**: Intr./Map: *Türk*; Dict./Own Entry: *Türk, c. in Ld. of Türk* 176,11.—**Türk** "Turks":[5] Intr./Text: *Türk* 3,4; *Khāqānī Turkish vs. Türkmän-Oghuz* 11,10f.; *Ld. of Türk* 24,6; *Kāshghar, some of its v.s speak lang. of Känčäk, but c. itself Khāqānī Turkish* 25,12f.; *main part of Ld. of Türk reaches from Rūm as far as Māṣīn* 25,13f.; *Oghuz and Qifčāq, vs. Türk* 26,1–6; *p. of Arghu vs. Türk 26,6–9; Oghuz, Qifčāq, Suvārīn, vs. Türk* 26,9–12; *Oghuz = Turkmān-Oghuz and others, vs. Türk, genuine Türk (ṣamīm al-Turk)* 26,12–17; *Oghuz and others, vs. genuine Türk (ṣamīm al-Turk)* 26,17–27,4; *Tukhsi, Qifčāq, Yapāqu, Tatār, Qāy, Čömül, Oghuz [vs. Türk]* 27,4–7; *Čigil = Čigil-Türk and other Türk, vs. a part of Qifčāq, Yemäk, Suvār, Bulghār and others next to Rūs and Rūm* 27,7–12; *p. of Khotan and Känčäk, vs. Türk* 27,15–17; *Oghuz vs. Türk* 28,2–4; *Oghuz, Qifčāq, vs. Türk* 28,6–13; Intr./Map: *Many people of the Türk*; Dict./Other Entry: *Ögüz, the name Oghuz use for r. Banākat, Ld. of Oghuz is on it, nomads of Oghuz settle on it and many tributaries of this r. are found in Ld. of Türk* 41,10–13; *r. Ila, where Yaghma, Tukhsi, and a part of Čigil settle, considered Djayḥūn of Ld. of Türk* 58,16f.; *Türk, c. in Ld. of Türk* 176,11; *Tübüt, tr. in Ld. of Türk, further east is Ṣīn, further west Käshmīr, further north Uyghur, further south S. of Hind* 179,2–7; *Khuzār, pl. in Ld. of Türk* 207,10; *Käshmīr, c. in Ld. of Türk* 230,5; *Qara Yalgha, mp. between Farghāna and Ld. of Türk* 458,9; *Ld. of Türk includes, in opinion of some Türk, also c.s of Qazwīn, Qum and Marw ash-Shāhidjān* 509,10–14; *Ld. of Türk includes, in opinion of some Türk, all of Transoxania, from Baykänd near Bukhārā to the east* 509,15–510,3; *Frontiers of Ld. of Türk reach from Özkänd until Ṣīn and from Rūm until Ṣīn, round S. of Ābisgūn* 510,6–8; Ref.name: *Māṣīn; Sayḥūn; S. of Ābisgūn; Käshmīr; Özkänd*; [*Čigil; Rūm; Khitāy; Yaghmā, Tukhsī, Tübüt*].—c. **Uč**: Intr./Map: *Uč*; Dict./Own Entry: *c. Uč* 30,1; Dict./Other Entry: *Badal Mp., between Uč and Barsghān* 198,2; *Čaghla, sp. of Uč* 217,4; *r. Tawushghān R., flows through c. Uč* 256,4f.; *Ay Köl, pl. near Uč* 502,14f; *Bāy Yighāč, pl. near Uč, between Uč and Kuča* 514,5f.—c. **Udun**: Intr./Map: *Khotan*; Dict./Own Entry: *Udun, c. of Khotan and also its p.* 50,17–51,1.—c. **Ulugh Talās**: Intr./Map: *Ṭarāz*; Dict./Own Entry: *Talās = Ṭarāz, two c.s, one called Ulugh Talās, the other one, on Frontier of Islam, Kümi Talās* 184,10f.; Ref.name: *Kümi Ṭarāz*.—**Ürüñ Qāsh** R.: Intr./Map: *one of the two r.s near Khotan*; Dict./Own Entry: *Qāsh R., two r.s which flow on both sides of c. Khotan, called Ürüñ Qāsh R. and Qara Qāsh R.* 511,4–7.—**Usmi Tarim** (pl.; r.) Intr./Map: *d.s and sands where water seeps away*; Dict./Own Entry: *r. Usmi Tarim, flows from Ld. of Islam to Uyghur, where it seeps away in the sand* 77,12f.; *Tarim = Usmi Tarim, pl. on Frontier of Uyghur, near Kuča, and also r. flowing through it* 199,17–200,1; Ref.name: *Ld. of Uyghur; Kuča*.—tr. **Uyghur**: Intr./Text: *Uyghur, tr. of Türk* 21,2; *Uyghur, a lang. group* 24,13f.; *p. on r.s Ila, Ärtish, Yamār, Ätil as far as Ld. of Uyghur, a lang.*

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[5] References to *Türk* as a people are too many to be quoted. I give only those passages that have a geographical relevance.

group 25,8f.; Intr./Map: *Ld. of Uyghur*; Dict./Own Entry: *Uyghur, ld. of five c.s* 68,13f.; *Uyghur, with c.s Sulmi, Qočo, Djanbaliq, Bēsh Baliq, Yañi Baliq* 69,10f.; Dict./Other Entry: *Tat = non-Muslim Uyghur* 30,9–11; *Altun Qān, m. near Uyghur* 58,7f.; *r. Usmi Tarim, flows from Ld. of Islam to Uyghur, where it seeps away in the sand* 77,12f.; *Arāmūt, tr. of Türk, near Uyghur* 81,15; *Ötükän, pl. in St.s of Tatār, near Uyghur* 81,9f.; *Tübüt, tr. in Ld. of Türk, further east is Ṣīn, further west Käshmīr, further north Uyghur, further south S. of Hind* 179,2–7; *Bögür, f. between Kuča and Uyghur, frontier c.* 182,1f.; *Bēsh Baliq "Five c.s," largest c. of Uyghur* 190,17–191,1; *Yañi Baliq "New c.," c. of Uyghur* 191,1; *Tarim = Usmi Tarim, pl. on Frontier of Uyghur, near Kuča, and also r. flowing through it* 199,17–200,1; *Küsän = Kuča, frontier c. of Uyghur* 204,2f.; *käwči, measure in use from Kāshghar to Uyghur* 210,14; *Miñlāq, pl. of Uyghur* 218,11–13; *Tawghāč, tr. of Türk in Tawghāč, called Tat Tawghāč = Uyghur Ṣīn* 228,9f.; *Tat among Uyghur* 243,2f.; *Tat, name used by Yaghma and Tukhsi for non-Muslim Uyghur* 406,15–407,2; *Tat Tawghāč, name used by Yaghma and Tukhsi for Uyghur Ṣīn* 406,16f.; *Uyghur Tat* 413,9; *Yul<u>d</u>uz L., on frontier between Kuča, Kiñüt and Uyghur* 502,13f.; *Qočo, c. in Uyghur, and ld. there* 541,12f.; *r. Ila, beyond it are Uyghur and Ld. of Miñlāq* 549,1–3; *Qočo = Ld. of Uyghur* 550,3; *frontier c. of Uyghur* 602,1; *Kiñüt, frontier c. of Uyghur* 603,1; *Altun Khān, m. near Uyghur, c.s of Uyghur* 624,17; Ref.name: *Sulmi, Qočo, Djanbaliq, Bēsh Baliq; Miñlāq.*—pl. **Varañ** "Varagians": Intr./Map: *Varañ*; Dict./Own Entry: *Varañ, pl. near Rūm, northern Ld. near Rūm* 80,1f.—**Wuḥūsh** "Wild Men": Intr./Map: *d.s, where Nasnās "Wild Man" is said to live; pl.s of* Wuḥūsh "*Wild Men*"; Dict./Other Entry: *käylik "wild" (nasnās), who walks like a mad (madkhūsh) or a wild (waḥshī) man* 522,7f.—**Yādjūdj wa-Mādjūdj** "Gog and Magog": Intr./Text: *p. of Gog and Magog, with wall* 24,10; Intr./ Map: *Ld. of Gog and Magog;* Ref.name: *Sadd <u>D</u>ī l-Qarnayn "Wall of Alexander the Great.*"– **Yaman** "Yemen": Intr./Map Table: *Ld. Yaman*; Dict./Other Entry: *al-Yaman* 55,15; 179,3.—**Yamār** (pl.; r.): Intr./Text: *p. on r.s Ila, Ärtish, Yamār, Ätil as far as Ld. of Uyghur, a lang. group* 25,8f.; Intr./Map: *r. Yamār*; Dict./Own Entry: *Yamār, pl. through which flows r. Yamār, and also a r. in St.s of Yapāqu* 456,6f.; Dict./Other Entry: *r. Yamār* 52,15–17; 266,8–10.—c. **Yārkänd**: Intr./Map: *Yārkänd*; Dict./Other Entry: *Baghram St., between Kāshghar and Yārkänd* 243,11.—**Yawinč**: (c., r.): Intr./Map: *Yawinč*; Dict./ Own Entry: *Yawinč, c. near r. Ila* 608,5; Dict./Other Entry: *Eki Ögüz, frontier c. between r. Ila and r. Yawinč* 41,13–15; Ref.name: *r. Ila.*—tr. **Yemäk**: Intr./ Text: *Yemäk, tr. of Türk* 20,16; *Yemäk, a lang. group* 25,6; *Čigil = Čigil-Türk and other Türk, vs. a part of Qifčāq, Yemäk, Suvār, Bulghār and others next to Rūs and Rūm* 27,7–12; Intr./Map: *St.s of Yemäk*; Dict./Own Entry: *Yemäk, considered Qifčāq by al-Kāshgharī, but Qifčāq consider them different from themselves* 456,15f.; Dict./Other Entry: *r. Ärtish, in St.s of Yemäk, flows in a l.* 61,5–7; *Yemäk, tr. of Qifčāq* 163,14; Ref.name: *Ab.s of Qifčāq, Ab. of Qifčāq and Oghuz.*—r. **Yuñu**: Intr./Map: *r. near Barmān*?; Dict./Own Entry: *r. Yuñu, flows through Barmān* 605,12–14.

B. *Reference Names Forgotten from Original Map Found in Text of Introduction and in Dictionary, Missing on Map*

Arghu (p., ld.): Intr./Text: *Arghu, a lang. group* 24,5; *Ld. of Arghu, from Isbīdjāb to Balāsāghūn* 25,11f.; *p. of Arghu, vs. Türk* 26,6–9; *Čigil vs. Yaghma, Tukhsi, Oghuz, a part of Arghu next to Ṣīn, vs. Qifčāq and others next to Rūm* 27,12–14; Dict./Own Entry: *Arghu, ld. from Ṭarāz to Balāsāghūn* 76,9f.; Dict./Other Entry: *c. Balāsāghūn and what is near it from Ld. of Arghu* 43,9f.; *Udu Känd, c. in Arghu* 56,4; *Balu, c. in Arghu* 547,16f.; *Qapush, pl. in Arghu* 185,12; *Čigil, c. near Ṭarāz, in Ld. of Arghu* 198,9–199,2.—**al-Baḥr al-Aʿẓam** "the Greatest Sea" (the Ocean): Intr./Text: *al-Baḥr al-Aʿẓam* 24,8.—**Čaruq**: Intr./Text: *Čaruq, tr. of Türk* 21,2; *Čaruq, a lang. group* 25,4; Dict./Own Entry: *Čaruq, tr. of Türk, in Barčuq, c. of Afrāsiyāb* 191,15.—**Čigil** (tr.; c.; some v.s): Intr./Text: *Türkmän-Oghuz-Čigil* 3,4; *Čigil, tr. of Türk* 21,1; *Čigil, a lang. group* 25,4; *Čigil = Čigil-Türk and other Türk, vs. a part of Qifčāq, Yemäk, Suvār, Bulghār and others next to Rūs and Rūm* 27,7–12; *Čigil vs. Yaghma, Tukhsi, Oghuz, a part of Arghu next to Ṣīn, vs. Qifčāq and others next to Rūm* 27,12–14; Dict./Own Entry: *Čigil, in Qayās, a c. behind Barsghān* 198,7f.; *Čigil, c. near Ṭarāz, in Ld. of Arghu* 198,9–199,2; *Čigil, some v.s in Kāshghar* 198,17–199,1; Dict./Other Entry: *Čigil* 43,8; *r. Ila, where Yaghma, Tukhsi, and a part of Čigil settle, considered Djayḥūn of Ld. of Türk* 58,16f.; *Oghuz call Čigil all Türk from Djayḥūn until Upper China* 198,15–17; *p. of r. Ila, i.e., Yaghma, Tukhsi and Čigil* 205,17; *Tukhsi = called Tukhsi Čigil, settle in Qayās* 213,6; *Qayās = Ld. of Tukhsi and Čigil, with three f.s Sāpligh Qayās, Ürüñ Qayās and Qara Qayās* 520,9f.; Ref.name: *r. Ila; Ṭarāz; Kāshghar*; [*Khitāy; Arghu*].—tr. **Känčäk**: Intr./Text: *Känčäk, a lang. group* 24,5; *Kāshghar, some of its v.s speak lang. of Känčäk, but c. itself Khāqānī Turkish* 25,12f.; *p. of Khotan and Känčäk, vs. Türk* 27,15–17 Dict./Own Entry: *Känčäk, tr. of Türk* 241,13.—**Khitāy** (Gansu): Intr./Text: *Khitāy = Ṣīn, tr. of Türk* 21,3; *Khitāy = Upper China* 550,7; Dict./Other Entry: *Ṣīn has three parts, one of the three parts is Middle China = Khitāy = Ṣīn* 228,6–9; Dict./Other Entry: *Khitāy = Ṣīn* 501,16; Ref.name: *Māṣīn, Kāshghar.*—tr. **Oghrāq**: Intr./Text: *Oghrāq, tr. of Türk* 21,2; *Oghrāq, a lang. group* 25,4; Dict./Own Entry: *Oghrāq, tr. of Turk, in frontier c. Qara Yighāč* 72,9f.—ld. **Qayās**: Dict./Own Entry: *Qayās = Ld. of Tukhsi and Čigil, with three f.s Sāpligh Qayās, Ürüñ Qayās and Qara Qayās* 520,9f.; Dict./Other Entry: *Čigil, in Qayās, a c. behind Barsghān* 198,7f.; *Tukhsi = Tukhsi Čigil, in Qayās* 213,6; *Käygän, two r.s which flow from Qayās to r. Ila, called Kičig Käygän and Ulugh Käygän* 522,1–3; Ref.name: r. *Ila.*—tr. **Qirqiz**: Intr./Text: *Qirqiz* 3,5; *Qirqiz, tr. of Türk, near Ṣīn* 20,17; *Qirqiz, a lang. group* 25,3; Dict./Own Entry: *Qirqiz* 230,11.—**Rūm** (Byzantines): Intr./Text: *Bäčänäk, tr. of Türk, near Rūm* 20,15f.; *Bäčänäk, a lang. group, near Rūm* 25,6; *main part of Ld. of Türk reaches from Rūm as far as Māṣīn* 25,13f.; *Čigil = Čigil-Türk, vs. a part of Qifčāq, Yemäk, Suvār, Bulghār and others next to Rūs and Rūm* 27,7–12; *Čigil vs. Yaghma, Tukhsi, Oghuz, a part of Arghu next to Ṣīn, vs. Qifčāq and others next to Rūm* 27,12–14; Dict./Other Entry: *Varañ, pl. near Rūm, northern Ld. near Rūm* 80,1f.; *Bäčänäk, near Rūm* 245,2f.; *Frontiers of Ld. of Türk reach from Özkänd until Ṣīn and from Rūm until Ṣīn, round S. of Ābisgūn* 510,6–8; Ref.

name: *Bäčänäk; Varañ; S. of Ābisgūn.*—**Ṣīn** "China" (Greater China; Gansu): Intr./Text: *Qirqiz, tr. of Türk, near Ṣīn* 20,17; *Khitāy = Ṣīn, tr. of Türk* 21,3; *Ṣīn, a lang. group* 24,16; *Čigil vs. Yaghma, Tukhsi, Oghuz, a part of Arghu next to Ṣīn, vs. Qifčāq and others next to Rūm* 27,12–14; Dict./Other Entry: *Ṣīn* 57,16; *Ashīdjān, c. on roadstations towards Ṣīn* 81,8; *Tañut, ld. near Ṣīn* 155,11–13; *Tübüt, tr. in Ld. of Türk, further east is Ṣīn, further west Käshmīr, further north Uyghur, further south S. of Hind* 179,2–7; *Djurčān, Muslim frontier c. on road to Ṣīn* 219,8; *Ṣīn has three parts, Upper China = Tawghāč = Māṣīn, 4 months behind Ṣīn, Middle China = Khitāy = Ṣīn, and Lower China = Barkhān = Kāshghar* 228,6–9; *Tawghāč, tr. of Türk in Tawghāč, called Tat Tawghāč = Uyghur Ṣīn* 228,9f.; *Tat Tawghāč, name used by Yaghma and Tukhsi for Uyghur Ṣīn* 406,16f.; *merchants of Ṣīn traveling to Ld. of Islam* 467,17–168,1; *Khitāy = Ṣīn* 501,16; *Qātūn Sīnī, c. between Tañut and Ṣīn 504,5; Frontiers of Ld. of Türk reach from Özkänd until Ṣīn and from Rūm until Ṣīn, round S. of Ābisgūn* 510,6–8; *Qātūn Sīnī, c. between Tañut and Ṣīn* 586,17–587,3; *Tañut, tr. of Türk near Ṣīn, claim that "we" descend from 'Arab* 602,16f.; Ref.name: *Ld. of Uyghur; Kāshghar; Māṣīn; Käshmīr; Māṣīn; S. of Ābisgūn.*—**Ṣoghd** "Sogdia": Intr./Text: *Ṣoghd* 25,10; Dict./Other Entry: *Ṣoghdāq, p. in Balāsāghūn, originally from Ṣoghd between Bukhārā and Samarqand* 237,6f.; Ref.name: *Samarqand.*—**Ṣoghdāq** "Sogdians": Intr./Text: *Ṣoghdāq, a lang. group* 24,5; Dict./Own Entry: *Ṣoghdāq, p. in Balāsāghūn, originally from Ṣoghd between Bukhārā and Samarqand* 237,6f.; Ref.name: *Balāsāghūn.*—tr. **Tañut**: Intr./Text: *Tañut, tr. of Türk* 21,3; *Tañut, a lang. group* 24,6; Dict./Own Entry: *Tañut, tr. of Türk, near Ṣīn, claim that "we" descend from 'Arab* 602,16f.; Dict./Other Entry: *Tañut, ld. near Ṣīn* 155,11–13; *Qātūn Sīnī, c. between Tañut and Ṣīn* 504,5; 586,17–587,3; *Qātūn Sīnī and Tañut* 587,16–588,2; Ref.name: *Qātūn Sīnī*; [*Khitāy*].—**Tübüt** (Tibetans): Intr./Text: *Tübüt, a lang. group* 24,6; 24,11; Dict./Own Entry: *Tübüt, tr. in Ld. of Türk, further east is Ṣīn, further west Käshmīr, further north Uyghur, further south S. of Hind* 179,2–7; Ref. name: *Käshmīr, Ld. of Uyghur.*—tr. **Tukhsi**: Intr./Text: *Tukhsi, tr. of Türk* 21,2; *Tukhsi, a lang. group* 25,4; 25,8; *Yaghma, Tukhsi, Qifčāq, Yapāqu, Tatār, Qāy, Čömül, Oghuz [vs. Türk]* 27,4–7; *Čigil vs. Yaghma, Tukhsi, Oghuz, a part of Arghu next to Ṣīn, vs. Qifčāq and others next to Rūm* 27,12–14; Dict./Own Entry: *Tukhsi = called Tukhsi Čigil, in Qayās* 213,6; Dict./Other Entry: *r. Ila, where Yaghma, Tukhsi, and a part of Čigil settle, considered Djayḥūn of Ld. of Türk* 58,16f.; *p. of r. Ila, i.e., Yaghma, Tukhsi and Čigil* 205,17; *Qayās = Ld. of Tukhsi and Čigil, with three f.s Sāpligh Qayās, Ürüñ Qayās and Qara Qayās* 520,9f.; Ref.name: *r. Ila.*—**Türkmän** (Oghuz or part of them):[6] Intr./Text: *Türkmän-Oghuz-Čigil* 3,4; *Khāqānī Turkish vs. Türkmän-Oghuz* 11,10f.; *Oghuz-Türkmän* 20,12; Dict./Own Entry: *Türkmän = Oghuz* 622,6–625,3; Dict./Other Entry: *Türkmän of Qarluq* 90,2f.; *Qarluq, tr. of Türk, not Oghuz, but Türkmän* 238,7f.; *Qarluq, tr. of Türkmän* 404,11; Ref.name: *Ab. of Qifčāq and Oghuz, Ld. of Oghuz*; [*Qarluq*].—

[6] For *Türkmän*, see Peter B. Golden, *An Introduction to the History of the Turkic Peoples: Ethnogenesis and State-Formation in Medieval and Early Modern Eurasia and the Middle East*, *Turcologica* vol. 9 (Wiesbaden: Harrassowitz, 1992), 212.

Yaghma (tr.; v.): Intr./Text: *Yaghma* 3,5; *Yaghma, tr. of Türk* 21,2; *Yaghma, a lang. group* 25,4; 25,7; *Yaghma, Tukhsi, Qifčāq, Yapāqu, Tatār, Qāy, Čömül, Oghuz [vs. Türk]* 27,4–7; *Čigil vs. Yaghma, Tukhsi, Oghuz, a part of Arghu next to Ṣīn, vs. Qifčāq and others next to Rūm* 27,12–14; Dict./Own Entry: *Yaghma, also called Qara Yaghma* 459,4; *Yaghma, v. near Ṭarāz* 459,5; Dict./Other Entry: *Āq Teräk, fd. of r. Ila in Yaghma* 53,10f.; *r. Ila, where Yaghma, Tukhsi, and a part of Čigil settle, considered Djayḥūn of Ld. of Türk* 58,16f.; *Yaghma, tr. in Kiñüt* 83,3–5; *r. Adghirāq, in Yaghma* 84,2; *p. of r. Ila, i.e., Yaghma, Tukhsi and Čigil* 205,17; *Tartuq, c. in Yaghma* 235,12; Ref.name: *r. Ila; Ṭarāz.*—tr. **Yapāqu**: Intr./Text: *Yapāqu, tr. of Türk* 20,17; *Yapāqu, a lang. group* 25,2; *Tukhsi, Qifčāq, Yapāqu, Tatār, Qāy, Čömül, Oghuz [vs. Türk]* 27,4–7; Dict./Own Entry: *Yapāqu* 460,3; Dict./Other Entry: *r. Yamār, in St.s of Yapāqu* 456,6f.

C. *Plain Names Explained by Reference Names, Found in Dictionary*

v. **Abul**: Dict./Own Entry: *Abul, "one of our v.s"* 49,7; Ref.name: *Barsghān.*—r. **Adghirāq**: Dict./Own Entry: *r. Adghirāq, in Yaghma* 84,2; Ref.name: *Yaghma.*—tr. **Adghīsh**: Dict./Own Entry: *Adgish, tr. of Türk, in Özkänd* 61,5; Ref.name: *Özkänd.*—v. **Adigh**: Dict./Own Entry: *Adigh, "one of our v.s"* 44,1f.; Ref.name: *Barsghān.*—tr. **Afshār**: Dict./Other Entry: *Afshār, tr. of Oghuz* 40,10; Ref.name: *Ab. of Qifčāq and Oghuz.*—sp. **Ala**: Dict./Own Entry: *Ala, sp. near Farghāna* 54,1; Ref.name: *Özkänd.*—v. **Alghuq**: Dict./Own Entry: *Alghuq, v. of Kāshghar* 63,7; Ref.name: *Kāshghar.*—tr. **Älkä Bulaq**: Dict./Own Entry: *Älkä Bulaq, tr. of Türk* 77,8; Dict./Other Entry: *Älkä Bulaq, tr. of Oghuz* 40,14; *Bulaq = Älkä Bulaq, once enslaved by Qifčāq* 191,2f.; Ref. name: *Ab. of Qifčāq and Oghuz.*—m. **Altun Qān**: Dict./Own Entry: *Altun Qān, m. near Uyghur* 58,7f.; Dict./Other Entry: *Altun Khān, m. near Uyghur* 624,13–17; Ref.name: *Ld. of Uyghur.*—v. **Alush**: Dict./Own Entry: *Alush, v. of Kāshghar* 43,4; Ref.name: *Kāshghar.*—fd. **Āq Teräk**: Dict./Own Entry: *Āq Teräk, fd. of r. Ila in Yaghma* 53,10f.; Ref.name: *r. Ila; Yaghma.*—**Arāmūt** (tr.; pl.): Dict./Own Entry: *Arāmūt, tr. of Türk, near Uyghur* 81,15; *Arāmūt*, pl. 81,15f.; Ref.name: *Ld. of Uyghur.*—**Artuč** (two v.s): Dict./Own Entry: *Artuč, two v.s in Kāshghar* 60,5f.; Ref.name: *Kāshghar.*—mp. **Aruq Turuq**: Dict./Own Entry: *Aruq Turuq, mp. between Farghāna and Kāshghar* 45,9; 191,5; Ref.name: Özkänd; Kāshghar.—pl. **Ashidjān**: Dict./Own Entry: *Ashīdjān, c. on roadstations towards Ṣīn* 81,8; Ref.name: *Ṣīn* .—pl. **Ay Köl**: Dict./Own Entry: *Ay Köl, pl. near Uč* 502,14f.; Ref.name: *Uč.*—tr. **Äymür**: Dict./Other Entry: *Äymür, tr. of Oghuz* 40,13; Ref.name: *Ab. of Qifčāq and Oghuz.*—**Badal** Mp.: Dict./Own Entry: *Badal Mp., between Uč and Barsghān* 198,2; Ref.name: *Uč; Barsghān.*—**Baghram** St.: Dict./Own Entry: *Baghram St., between Kāshghar and Yārkänd* 243,11; Ref.name: *Kāshghar; Yārkänd.*—**Baḥr al-Hind** "Sea of the Indians" (Indian Ocean): Dict./Other Entry: *tr. Tübüt in Ld. of Türk, further east is Ṣīn, further west Käshmīr, further north Uyghur, further south S. of Hind* 179,2–7; Ref.name: *Käshmīr; Ld. of Uyghur.*—tr. **Bäktili**: Dict./Other Entry: *Bäktili, tr. of Oghuz* 40,10f.; Ref.name: *Ab. of Qifčāq and Oghuz.*—c. **Balu**:

Dict./Own Entry: *Balu, c. in Arghu* 547,16f.; Ref.name: [*Arghu*].—pl. **Baqirliq**: Dict./Own Entry: *Baqirliq, pl. near Balāsāghūn* 248,2f.; Ref.name: *Balāsāghūn*.—**Barkhān** (f.; Xinjiang): Dict./Own Entry: *Barkhān = Lower China* 219,9; Barkhān, f. near Kāshghar, with gold mines 219,9f.; Dict./Other Entry: *Ṣīn has three parts, one of the three parts is Lower China = Barkhān = Kāshghar* 228,6–9; Ref.name: *Kāshghar*. tr. **Bayāt**: Dict./Own Entry: *Bayāt, tr. of Oghuz* 520,7; Dict./Other Entry: *Bayāt, tr. of Oghuz* 40,12; Ref.name: *Ab. of Qifčāq and Oghuz, Ld. of Oghuz*.—c. **Baykänd**: Dict./Own Entry: *Baykänd = Diz-rū'īn, the beginning of Transoxania, c. near Bukhārā* 509,15–510; Ref.name: *Bukhārā*.—tr. **Bāyundur**: Dict./Other Entry: *Bāyundur, tr. of Oghuz* 40,8; Ref.name: *Ab. of Qifčāq and Oghuz*.—pl. **Bāy Yighāč**: Dict./Own Entry: *Bāy Yighāč, pl. near Uč, between Uč and Kuča* 514,5f.; Ref.name: *Uč; Kuča*.—f. **Bögür**: Dict./Own Entry: *Bögür, f. between Kuča and Uyghur, frontier c.* 182,1f.; Ref.name: *Kuča; Ld. of Uyghur*.—tr. **Bügdüz**: Dict./Other Entry: *Bügdüz, tr. of Oghuz* 40,11; Ref.name: *Ab. of Qifčāq and Oghuz*. –tr. **Bulaq**: Dict./Own Entry: *Bulaq = Älqä Bulaq, for a while enslaved by Qifčāq* 191,2f.; Ref.name: *Ab.s of Qifčāq, Ab. of Qifčāq and Oghuz*.—sp. **Čaghla**: Dict./Own Entry: *Čaghla, sp. of Uč* 217,4; Ref.name: *Uč*.—tr. **Čäpni**: Dict./Other Entry: *Čäpni, tr. of Oghuz* 41,2f.; Ref.name: *Ab. of Qifčāq and Oghuz*.—tr. **Čaruqlugh**: Dict./Other Entry: *Čaruqlugh, tr. of Oghuz* 41,3f.; Ref.name: *Ab. of Qifčāq and Oghuz*.—tr. **Čuvuldar**: Dict./Other Entry: *Čuvuldar, tr. of Oghuz* 41,2; Ref.name: *Ab. of Qifčāq and Oghuz*.—**Diz-rū'īn** (c. Baykänd): Dict./Other Entry: *Baykänd = Diz-rū'īn, the beginning of Transoxania, c. near Bukhārā* 509,15–510; Ref.name: *Bukhārā*.—tr. **Ewä**: Dict./Own Entry: *Ewä, tr. of Oghuz* 454,14f.; 455,15; Dict./Other Entry: *Ewä, tr. of Oghuz* 40,8f.; Ref.name: *Ab. of Qifčāq and Oghuz*.—c. **al-Fārāb**: Dict./Other Entry: *Qaračuq = al-Fārāb, c. of Ld. of Oghuz* 244,15f.; Ref.name: *M. Qaračuq*.—tr. **Khalač**: Dict./Own Entry: *Khalač* 624,7f.; 624,11; Ref.name: *Ab.s of Qifčāq, Ab. of Qifčāq and Oghuz*.—pl. **Khuzār**: Dict./Own Entry: *Khuzār, pl. in Ld. of Türk* 207,10.—tr. **Igdir**: Dict./Other Entry: *Igdir, tr. of Oghuz* 40,14f.; Ref.name: *Ab. of Qifčāq and Oghuz*.—c. **Känčäk Shäñir**: Dict./Own Entry: *Känčäk Shäñir, c. near Ṭarāz, frontier c. of Qifčāq* 241,14; Ref.name: *Ṭarāz; Ab.s of Qifčāq, Ab. of Qifčāq and Oghuz*.—**Käygän** (two r.s): Dict./Own Entry: *Käygän, two r.s which flow from Qayās to r. Ila, called Kičig Käygän and Ulugh Käygän* 522,1–3; Ref.name: *r. Ila*.—r. **Kičig Käygän**: Dict./Own Entry: *Käygän, two r.s which flow from Qayās to r. Ila, called Kičig Käygän and Ulugh Käygän* 522,1–3; Ref.name: *r. Ila*.—c. **Kiñüt**: Dict./Own Entry: *Kiñüt, frontier c. of Uyghur* 603,1; Dict./Other Entry: *Yaghma, tr. in Kiñüt* 83,3–5; *Yulduz L., on frontier between Kuča, Kiñüt and Uyghur* 502,13f.; Ref.name: *Kuča; Ld. of Uyghur*.—**Körüñ** L.: Dict./Own Entry: *Körüñ, l. at a sp. in M.s of Kāshghar* 502,12f.; *Körüñ L., near Kāshghar* 606,7; Ref.name: *Kāshghar*.—tr. **Kūčät**: Dict./Own Entry: *Küčät, tr. of Türk, have been settled in Khwārazm* 180,2f.; Ref.name: *Khwārazm*.—c. **Mān Känd**: Dict./Own Entry: *Mān Känd, former c. near Kāshghar* 514,3f.; Ref.name: *Kāshghar*.—pl. **Miñlāq**: Dict./Other Entry: *Miñlāq, pl. of Uyghur* 218,11–13; *r. Ila, beyond it are Uyghur and Ld. of Miñlāq* 549,1–3; Ref.name: *r. Ila; Ld. of Uyghur*.—f. **Ordu**: Dict./Own

Entry: *Ordu, f. near Balāsāghūn* 74,15f.; Ref.name: *Balāsāghūn.* –c. **Qamlanču**: Dict./Own Entry: *Qamlanču, c. near Eki Ögüz* 552,4; Ref.name: *Eki Ögüz.*—pl. **Qapush**: Dict./Own Entry: *Qapush, pl. in Arghu* 185,12; Ref.name: *Isbīdjāb, Ṭarāz, Balāsāghūn.*—tr. **Qara Bölük**: Dict./Other Entry: *Qara Bölük, tr. of Oghuz* 40,13; Ref.name: *Ab. of Qifčāq and Oghuz.*—f. **Qara Qayās**: Dict./Own Entry: *Qayās = Ld. of Tukhsi and Čigil, with three f.s Sāpligh Qayās, Ürüñ Qayās and Qara Qayās* 520,9f.; Ref.name: *r. Ila.*—pl. **Qara Säñir**: Dict./Own Entry: *Qara Shäñir, pl. in Barsghān* 543,6f.; Ref.name: *Barsghān.*—mp. **Qara Yalgha**: Dict./Own Entry: *Qara Yalgha, mp. between Farghāna and Ld. of Türk* 458,9; Ref.name: *Özkänd.*—tr. **Qara Yighāč**: Dict./Other Entry: *Oghrāq, tr. of Turk, in frontier c. Qara Yighāč* 72,9f.; Ref.name: [*Oghrāq*].—f. **Qarghaligh**: Dict./Own Entry: *Qarghaligh, f. near Ṭarāz* 263,2; Ref.name: *Ṭarāz.*—c. **Qarnāq**: Dict./Own Entry: *Qarnāq, c. of Ld. of Oghuz* 238,8; Ref.name: *Ab. of Qifčāq and Oghuz, Ld. of Oghuz.*—pl. **Qasi**: Dict./Own Entry: *Qasi,* "*one of our pl.s*" 544,5; Ref.name: *Barsghān.*—**Qawaq** Mp.: Dict./Own Entry: *Qawaq Mp., between Kāshghar and Özkänd* 192,15; Ref.name: *Kāshghar; Özkänd.*—tr. **Qayigh**: Dict./Other Entry: *Qayigh, tr. of Oghuz* 40,7f.; 517,15; Ref.name: *Ab. of Qifčāq and Oghuz.*—r. **Qāz**: Dict./Own Entry: *r. Qāz, flows into r. Ila* 510,8f.; Ref.name: *r. Ila.*—tr. **Qiniq**: Dict./Other Entry: *Qiniq, tr. of Oghuz* 40,6; 624,1; Ref.name: *Ab. of Qifčāq and Oghuz.*—r. **Qizil**: Dict./Own Entry: *r. Qizil, in Kāshghar* 199,5f.; Ref.name: *Kāshghar.*—**Qizil** Wp.: Dict./Own Entry: *Qizil Wp., in M.s of Kāshghar* 53,2; Ref.name: *Kāshghar.*—c. **Sabrān**: Dict./Own Entry: *Sabrān, c. in Ld. of Oghuz* 219,13f.; Ref.name: *Ab. of Qifčāq and Oghuz, Ld. of Oghuz.*—c. **Säkirmä**: Dict./Own Entry: *Säkirmä, c. on road to Khotan* 246,2; Ref.name: *Khotan.*—tr. **Salghur**: Dict./Other Entry: *Salghur, tr. of Oghuz* 40,9f.; 624,1; *tr. Salghur* 505,6f.; Ref. name: *Ab. of Qifčāq and Oghuz.*—f. **Sāpligh Qayās**: Dict./Own Entry: *Qayās = Ld. of Tukhsi and Čigil, with three f.s Sāpligh Qayās, Ürüñ Qayās and Qara Qayās* 520,9f.; Ref.name: *r. Ila.*—**Shū** (r. Sūyāb): Dict./Other Entry: *Shū, r. near Balāsāghūn* 623,2f.; *c. Shū* 625,1–3; Ref.name: *Balāsāghūn.*—**Sid̲iñ** L.: Dict./Own Entry: *Sidiñ L., near Qočñār Bāshi* 502,13; 605,15f.; Ref.name: *Qočñār Bāshi.*—**al-Ṣīn al-Wusṭā** "Middle China" (Gansu): Dict./Other Entry: *Ṣīn has three parts, one of the three parts is Middle China = Khitāy = Ṣīn* 228,6–9; Ref. name: *Māṣīn; Kāshghar.*—c. **Sitkün**: Dict./Own Entry: *Sitkün, c. of Ld. of Oghuz* 222,14; Ref.name: *Ab. of Qifčāq and Oghuz, Ld. of Oghuz.*—c. **Sughnāq**: Dict./Own Entry: *Sughnāq, c. of Ld. of Oghuz* 237,10; Ref.name: *Ab. of Qifčāq and Oghuz, Ld. of Oghuz.*—r. **Tämän**: Dict./Own Entry: *r. Tämän, flows through Kāshghar* 202,14; Ref.name: *Kāshghar.*—**Täriñ** L. (L.Balkhash) Dict./Own Entry: *Täriñ L., at frontier of Eki Ögüz* 502,15; Ref.name: *Eki Ögüz.*—c. **Tartuq**: Dict./Own Entry: *Tartuq, c. in Yaghma* 235,12; Ref.name: *r. Ila.*—sp. **Tēz** "Sp.": Dict./Own Entry: *Tēz = Tarigh Art Sp., sp. of Kāshghar* 496,14f.; Ref.name: *Kāshghar.*—tr. **Tögär**: Dict./Other Entry: *Tögär, tr. of Oghuz* 40,17–41,1; Ref.name: *Ab. of Qifčāq and Oghuz.*—pl. **Toqurqa**: Dict./Own Entry: *Toqurqa, pl. in sp. of Kāshghar* 245,12; Ref.name: *Kāshghar.*—**Turigh Art** Sp.: Dict./Own Entry: *Turigh Art Sp., sp. of Kāshghar* 187,17; *Tēz = Tarigh Art Sp., sp. of Kāshghar* 496,14f.; Ref.name: *Kāshghar.*—r. **Tūtirqa**: Dict./

Other Entry: *Tūtirqa, tr. of Oghuz* 40,16f.; Ref.name: *Ab. of Qifčāq and Oghuz.*—c. **Uḏu Känd**: Dict./Own Entry: *Uḏu Känd, c. in Arghu* 56,4; Ref.name: *Isbīdjāb, Ṭarāz, Balāsāghūn.*—tr. **Ūla Yondlugh**: Dict./Other Entry: *Ūla Yondlugh, tr. of Oghuz* 40,17; Ref.name: *Ab. of Qifčāq and Oghuz, Ld. of Oghuz.*—r. **Ulugh Käygän**: Dict./Own Entry: *Käygän, two r.s which flow from Qayās to r. Ila, called Kičig Käygän and Ulugh Käygän* 522,1–3; Ref.name: *r. Ila.*—tr. **Ürägir**: Dict./Other Entry: *Ürägir, tr. of Oghuz* 40,15f.; Ref.name: *Ab. of Qifčāq and Oghuz.*—f. **Ürüñ Qayās**: Dict./Own Entry: *Qayās = Ld. of Tukhsi and Čigil, with three f.s Sāpligh Qayās, Ürüñ Qayās and Qara Qayās* 520,9f.; Ref. name: *r. Ila.*—c. **Utluq**: Dict./Own Entry: *Utluq, c. near Ṭarāz* 62,1; Ref. name: *Ṭarāz.*—**Yapāqu** (r.; d.s): *r. Yapāqu, flows through Özkänd of Farghāna from M.s of Kāshghar* 460,4f.; Dict./Other Entry: *Yamār, pl. through which flows r. Yamār, and also a r. in D.s of Yapāqu* 456,6f.; Ref.name: *r. Yamār; Özkänd; Kāshghar.*—tr. **Yatuq**: Dict./Own Entry: *Yatuq, sedentary Oghuz* 450,16–451,1; Ref.name: *Ld. of Oghuz.*—**Yawghu** (c.; mp.): Dict./Own Entry: *Yawghu, c. near Barsghān, and also a mp. nearby* 458,8; Ref.name: *Barsghān.*—tr. **Yazghir**: Dict./Other Entry: *Yazghir, tr. of Oghuz* 40,12f.; Ref.name: *Ab. of Qifčāq and Oghuz.*—**Yulduz** L.: Dict./Own Entry: *Yulḏuz L., on frontier between Kuča, Kiñüt and Uyghur* 502,13f.; Ref.name: *Kuča; Ld. of Uyghur.*—sp. **Yün Ariq**: Dict./Own Entry: *Yün Ariq, sp. near Balāsāghūn* 507,5; Ref.name: *Balāsāghūn.*—**YYZ'VY** Sp.: Dict./Own Entry: *YYZ'VY Sp., near Barsghān* 496,16; Ref. name: *Barsghān.*—mp. **Zānbi** Mp.: Dict./Own Entry: *Zānbi Mp., between Qočñār Bāshi and Balāsāghūn* 634,11; Ref.name: *Qočñār Bāshi; Balāsāghūn.*

D. *Plain Names Left Unexplained, Found in Dictionary*

pl. **Ala Yighāč**: Dict./Own Entry: *Ala Yighāč, pl. on Frontier* 54,1.—pl. **Āq Sāy**: Dict./Own Entry: 53,10.—**ATZÑ** Sp.: Dict./Own Entry: 496,15f.—pl. **Barčān**: Dict./Own Entry: 219,6.—c. **Barčuq**: Dict./Own Entry: *pl. Barčuq* 234,14f.; Dict./Other Entry: *Čaruq, tr. of Türk, in Barčuq, c. of Afrāsiyāb* 191,15.—**Buqāč** Mp.: Dict./Own Entry: 207,6.—c. **Ēnč Känd**: Dict./Own Entry: *Ēnč Känd, former c., had belonged to p. of al-Muqannaʿ* 633,7.—r. **Khudjanda**: Dict./Other Entry: 623,4f.—**Qashgha Bughra** (two pl.s): Dict./Own Entry: 214,15f.—pl. **Sīghun Samur**: Dict./Own Entry: 206,13.—**Shiqnī** (Čaghāniyān?): Dict./Other Entry: *p. in Farghāna and in Ld. of Shiqni* 409,1.—pl. **Suwlāgh**: Dict./Own Entry: 233,16f.—c. **Tunkänd**: Dict./Own Entry: 510,3. – c. **Yañī Baliq**: Dict./Own Entry: *Yañi Baliq "New c.," c. of Uyghur* 191,1; Dict./Other Entry: *Uyghur, with five c.s* 68,13f.; *Uyghur, with c.s Sulmi, Qočo, Djanbaliq, Bēsh Baliq, Yañi Baliq* 69,10f.

E. *Famous Names Found in Text of Introduction and/or Dictionary*

'Ād (former Arab tr.): Dict./Other Entry: *Tawghāč ādi "a Tawghāč thing," an ancient and imposing manufactured item, like Arabic shay' 'ādī "a 'Ād thing"* 228,10f.—**'Arab** "Arabs": Dict./Other Entry: *Tañut, tr. of Türk near Ṣīn, claim that "we" descend from 'Arab* 602,16f.—c. **Bukhārā**: Dict./Other Entry: *Bukhārā* 2,13; *Ṣoghdāq, in Balāsāghūn, originally from Ṣoghd between Bukhārā and Samarqand* 237,6f.; *Baykänd = Diz-rū'īn, the beginning of Transoxania, c. near Bukhārā* 509,15–510; Ref.name: *Samarqand*.—**Furāt** "Euphrat": Dict./Other Entry: *r. Djayḥūn and r. al-Furāt* 41,10.—Ld. of **Islam**: Intr./Text: *Ld. of Islam vs. Ld. of non-Islam* 19,17–20,3; Dict./Other Entry: *r. Usmi Tarim, flows from Ld. of Islam to Uyghur, where it seeps away in the sand* 77,12f.; *merchants of Ṣīn traveling to Ld. of Islam* 467,17–168,1; *Frontiers of Ld. of Türk reach from Özkänd until Ṣīn and from Rūm until Ṣīn, round S. of Ābisgūn* 510,6–8.—Ld. of non-**Islam**: Intr./Text: *Ld. of Islam vs. Ld. of non-Islam* 19,17–20,3.—c. **Marw ash-Shāhidjān**: Dict./Other Entry: *Ld. of Türk includes, in opinion of some Türk, also c.s of Qazwīn, Qum and Marw ash-Shāhidjān* 509,10–14.—**Mā warā' al-Nahr** "Transoxania": Dict./Other Entry: *Ld. of Türk includes, in opinion of some Türk, all of Transoxania, from Baykänd to the east* 509,15–510,3.—c. **Naysābūr**: Intr./Text: *Naysābūr* 2,16.—tr. **Qarluq**: Dict./Own Entry: *Qarluq, tr. of Türk, not Oghuz, but Türkmän* 238,7f.; Dict./Other Entry: *Qarluq* 67,2; 223,2; *Türkmän of Qarluq* 90,2f.; *Qarluq, tr. of Türkmän* 404,11.—c. **Qazwīn**: Dict./Other Entry: *Ld. of Türk includes, in opinion of some Türk, also c.s of Qazwīn, Qum and Marw ash-Shāhidjān* 509,10–14.—c. **Qum**: Dict./Other Entry: *Ld. of Türk includes, in opinion of some Türk, also c.s of Qazwīn, Qum and Marw ash-Shāhidjān* 509,10–14.—**Tat** (Persians; non-Muslim Uyghur): Dict./Own Entry: *Tat, for most Türk: a synonym of Fārisī* 406,14f.; *Tat, name used by Yaghma and Tukhsi for non-Muslim Uyghur* 406,15–407,2; *Tat Tawghāč, name used by Yaghma and Tukhsi for Uyghur Ṣīn* 406,16f.; *Tat = Fārisī, vs. Türk* 407,2–4; Dict./Other Entry: *Tat = Fārisī, vs. Türk* 176,10f.; *Tawghāč, tr. of Türk in Tawghāč, called Tat Tawghāč = Uyghur Ṣīn* 228,9f.; *Tat = Fārisī and Tawghāč = Turkī* 228,12–14; *Tat among Uyghur* 243,2f.; *Tat = Fārisī* 244,4f.; *Čomaq = Muslim, vs. Tat = non-Muslim, in the language of Uyghur* 265,4f.; *Tat = Fārisī* 327,2f.; *Tat, their lang. is Fārisī, or lang. of Uyghur* 370,4f.; *Tat = Furs* "Persians" 374,16f.; *Uyghur Tat* 413,9; *Tat = Furs* 572,12f.—**Thaghr** "Frontier": *Eki Ögüz, frontier c. between r. Ila and r. Yawinč* 41,13–15; *Ala Yighāč, pl. on Frontier* 54,1; *Oghrāq, tr. of Turk, in frontier c. Qara Yighāč* 72,9f.; *Bögür, f. between Kuča and Uyghur, frontier c.* 182,1f.; *Talās = Ṭarāz, two c.s, one called Ulugh Talās, the other one, on Frontier of Islam, Kümi Talās* 184,10f.; *Tarim = Usmi Tarim, pl. on Frontier of Uyghur, near Kuča, and also r. flowing through it* 199,17–200,1; *Küsän = Kuča, frontier c. of Uyghur* 204,2f.; *Djurčān, Muslim frontier c. on road to Ṣīn* 219,8; *Känčäk Shäñir, c. near Ṭarāz, frontier c. of Qifdjāk* 241,14; *Yulḏuz L., on frontier between Kuča, Kiñüt and Uyghur* 502,13f.; *Täriñ L., at Frontier of Eki Ögüz* 502,15; *Frontiers of Ld. of Türk reach from Özkänd until Ṣīn and from Rūm until Ṣīn, round S. of Ābisgūn* 510,6–8; *frontier c.s of Islam* 511,15; *a frontier c. of Uyghur* 602,1; *Kiñüt, frontier c. of Uyghur* 603,1.

F. *Famous Names Found on Main Part of Map*

Baldat al-**'Alawiyya** "C. of 'Alawites."—**'BMDj** [?].—c. **Darband-i Khazarān** "Darband of Khazar."—**Djāfū** (c.?).—**Gharb** "west."—c. **Ghazna**.—Arḍ-i **Gilim-gūshān** "Ld. of Blanket-ears."—**Kāsān**.—c. **Khudjand**.—**Mahbaṭ Ādam** "the Place where Adam came to Earth [on Sri Lanka]."—c. **Marghinān**.—c. called **Muḥditha** (c. al-Qarya l-Ḥadītha, Yañi Baliq, the capital of Uyghur).—Baldat al-**Nisā** "C. of Women."—**Saqāliba** "Slaves."—**Sarandīb** (Sri Lanka): *Sarandīb, M. of Sarandīb*.—**Sayḥūn** (r. Syr Darya).—**Sharq** "east."—ld. **Ṭabaristān**.

G. *Famous Names Found on Map Table*

Arḍ **Ādharbādagān** "Ld. Ādharbaydjān."—Arḍ al-**Akrād** "Ld. of the Kurds."—Bilād-i **Barbar** "Ld. of the Berbers."—Arḍ al-**Dayālima** "Ld. of the Daylamites."—Bilād al-**Ḥabasha** "Ld. of the Ethiopians."—Arḍ al-**Ḥidjāz** "Ld. al-Ḥidjāz."—Bilād-i **Hind** "Ld. of the Indians."—Ḥudūd **Miṣr** "Frontiers of Egypt."—Arḍ al-**'Irāqayn** "Ld. of the Two Iraqs."—c. al-**Iskandariyya** "Alexandria."—Arḍ **Khurāsān** "Ld. Khurāsān."—Bilād **Khūzistān** "Ld. Khūzistān."—Bilād **Kirmān** "Ld. Kirmān."—Arḍ al-**Maghāriba** wa-hiya **Andalus** "the Ld. of the Northafricans which is Spain" (Spain).—[region in the **north**] inhabited because of its extreme cold.—Bilād al-**Qayrawān** wa-ghayruhā "Ld. of al-Qayrawān, etc." (Northafrica).—Arḍ ash-**Sha'm** "Ld. Syria-Palestine."—Bilād **Sidjistān** "Ld. Sīstān."—Bilād-i **Sind** "Ld. Sind" (Northwest India).—[region in the] **west** [i.e., south] inhabited because of its extreme heath.—Bilād al-**Zandj** "Ld. of the Zandj" (East Africa).—Bilād al-**Zuṭṭ** "Ld. of the Zuṭṭ" (South Iraq).

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